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THE CONDITIONS OF EXPANSION[1]

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I

In 1940, output per man-hour in American nonagricultural industries was roughly double that of 1920. In few periods of history has capacity to produce goods grown more rapidly than in the last twenty years. The industrial research staffs of American business in 1940 were nine times as large as in 1920, and so also were expenditures on research. At no time in the country's history had its capacity to increase production been so great. And yet the community which possessed this unparalleled productive capacity to improve methods and products did not glory in its strength. It was perplexed and baffled. Instead of looking forward confidently to achieving ever rising standards of living, it dreaded the future. It asked whether investment opportunities were becoming permanently insufficient, whether the rules for achieving prosperity were undergoing fundamental changes, whether new conditions were making its economic institutions no longer workable.

This sense of doubt and inadequacy did not exist, in the United States at least, before 1929. It was created by the depression and by the disappointing recovery. The great national effort required by the war may prove to be precisely what is needed to restore the country's faith in its capacity to master great problems. Nevertheless, the task of winning the peace requires that we face frankly the questions raised by the depression and the disappointing recovery. Is it true that new conditions—the decline in geographical expansion, the drop in population growth, shifts in economic and political power, and changes in public policy—are radically altering the problem of maintaining employment, so that plans for the post-war world must envisage important changes in policies and institutions? The thesis of these remarks is that the answer to this question is a qualified Yes.

[1] Presidential address delivered at the Fifty-fourth Annual Meeting of the American Economic Association, New York City, December 29, 1941.

II

Since the questions under consideration were first raised in this country by the disappointing recovery from the depression, it is convenient to begin our survey by a brief examination of some of the circumstances affecting recovery.

Whatever may be the ultimate effects of the decline in geographical expansion or the drop in the growth of population, neither of these influences appears to explain the depression or the disappointing recovery. Of course, it would have helped had there been another Mississippi Valley to develop. But no sudden change occurred in the state of our natural resources between the twenties and the thirties. Furthermore, older and more developed countries experienced a milder depression and recovered more completely.[2] As for the spectacular drop in the rate of population growth between the twenties and the thirties, evidence is lacking that it produced either an unfavorable shift in the consumption function or an unfavorable change in the slope of the function. Indeed, the number of non-employed persons per member of the working force has shown no appreciable change in forty years.[3] The possibility that drop in the population growth might have retarded expansion by limiting the opportunity to widen capital is excluded partly by the fact that the increase in the number of families dropped only slightly, and partly by the large and persistent unemployment which characterized the period. As far as the labor supply was concerned, ample opportunity to widen capital existed.

III

To a considerable extent the depression and the unsatisfactory recovery are explained by conditions which do not reflect permanent changes in the economic environment. Failure of banks was probably the most important single influence in making the depression more severe in the United States than in most other countries. No one would contend, however, that the vulnerability of our banking system to depression was a necessary or permanent condition. The very severity of the depression and the bank failures which accompanied it were themselves major impediments to recovery. Consider their effect in diminishing the fortunes of thousands of local capitalists and in making these men reluctant to risk the remainder of their resources. Small local

[2] By 1936, when 20 out of 23 countries reporting industrial production to the League of Nations had surpassed the output of 1929, industrial production in the United States was still 7 per cent below 1929. This country was in twenty-first place out of 23 countries in recovery from 1929. The industrial production in the United Kingdom in 1936 was 15.8 per cent above 1929; in Sweden, 35.0 per cent; in Finland, 39.0 per cent; in Denmark, 30.0 per cent; in Hungary, 18.4 per cent.

[3] The number of non-employed for every gainfully employed worker has changed as follows: 1900, 2.61; 1910, 2.41; 1920, 2.54; 1930, 2.51; 1940, 2.50.

capitalists have always been an important dynamic influence in the economy.[4] The bank failures and other special circumstances were also largely responsible for the great amount of distress housing which hung over the market until 1937. This prolonged the depression in residential building long after the rest of the economy had revived. In the absence

[4] Some indirect evidence of the effect of the depression upon local capitalists is provided by the income tax returns. For example, if one compares the volume of income after taxes in 1931 and 1935, two years in which the national income was about 55 billion dollars, one finds that incomes of $25,000 or more in the former year totaled 1.9 billion dollars, and in the latter, 1.5 billion dollars, or 21.9 per cent less. (Imre de Vegh, "Savings, Investment, and Consumption," *Am. Econ. Rev.*, Suppl., vol. xxx, Feb., 1941, p. 238.) These figures do not allow for capital gains and losses. Since the year 1931 was one in which capital losses were large, the realized incomes of over $25,000 before capital losses in 1931 were undoubtedly considerably more than 1.9 billion dollars.

An impediment to recovery after 1933 that has been neglected is the scarcity of business savings. The principal source of venture capital always has been the plowed-back earnings of business enterprises. These have always been the spearhead of expansion, the prerequisite for drawing in funds from the outside. Although individual corporations were able to save, corporations as a whole had no savings in the entire period from 1929 to 1939. And between 1935 and 1938, dividend disbursements exceeded earnings by a billion a year.

Corporations failed to save in the main because during the twenties they had established high dividend rates which they were attempting to restore. The disbursements of dividends were encouraged in 1936 and 1937 by the undistributed profits tax. Of course, enterprises had depreciation allowances, but there were severe demands upon these because of the postponed maintenance from the worst years of the depression. Even when allowance is made for funds from depreciation allowances, the amounts available for reinvestment by corporations in 1935 and 1936 were far smaller than in 1923, when the national income was comparable in amount. In 1923, undistributed profits and depreciation of non-financial corporations were 5.3 billion dollars. In 1935 and 1936, undistributed profits, depreciation, and depletion were $2.0 billions and $2.7 billions respectively. (T.N.E.C., *Hearings*, Part 9, "Savings and Investment," p. 4039, Exhibit 582.)

An important aspect of plowed-back earnings is that they are venture capital. They increase the equity of the business owners. Plowed-back earnings must be regarded as an even more important dynamic influence than the investments of the well-to-do. In the five years, 1922 to 1927, for example, business savings were 13.4 billion dollars. (S. Kuznets, *National Income and Capital Formation*, 1919-1935, p. 24.) Income of persons receiving more than $25,000 a year (after the payment of federal income taxes) in the same period was 21.9 billion dollars. (Imre de Vegh, *loc. cit.*) If we assume that half of the incomes above $25,000 were saved, the investment-seeking funds from this source in the period 1922 to 1927, were not quite 11 billion dollars.

Many economists have regarded business savings as a deflationary influence. In periods of contraction they probably are. The view that they are always a deflationary influence overlooks the fact that expansion begins with the plowing back of earnings. This is a preliminary step to getting outside capital. This is why business savings constitute the spearhead of expansion. In order to judge the full effect of plowing back of earnings, one must allow for its contagious effect. An expansion or improvement by one competitor compels rivals to make investment in an attempt to hold their position. This involves a "multiplier" which is different from the consumption multiplier used by Keynes. The Keynesian multiplier is based upon the amount of additional consumption which will be induced by a given expansion of investment. The investment multiplier indicates the additional investment that will be directly induced by a given expansion of investment.

of this distress housing, building construction in the period 1934 to 1937 would undoubtedly have been two to three times the rate which prevailed. Since housing has always been the most important single outlet for investment-seeking funds, the persistence of the depression in housing was a main deterrent to recovery.[5]

But conditions of a more permanent nature have influenced the recovery. The depression produced, or at least greatly accelerated, shifts in economic and political power which are likely to be permanent and it enormously stimulated the making of economic policy by the government. These shifts in power and changes in public policy not only affected recovery from the depression, but altered the long-run problem of giving employment. It is important to examine their influence.

IV

On the whole, the shift in economic and political power impeded recovery. It did this in three principal ways. In the first place, the very fact that a great shift in power was going on created uncertainty concerning the long-term yield on capital and hence created an abnormal preference for short-term production plans. In this way, uncertainty narrowed investment opportunity and reduced temporarily the marginal return on capital.[6]

In the second place, the shift in economic power altered in many plants the control of managements over labor costs and increased the difficulty of converting a rise of output into profits. It is instructive to compare the revival of profits after 1934 with the revival after 1921—two years in which national income was about 50 billion dollars. In 1921, non-financial corporations had a deficit of 355 million dollars, in contrast with a profit of 884 million dollars in 1934. Between 1921 and 1923, a rise of the national income of 17.2 billion dollars to a level of 70 billion dollars produced a 5.5 billion-dollar gain in the profits of non-financial corporations. Between 1934 and 1937, a slightly larger

[5] Part of the difficulties in housing must be attributed to unsatisfactory financial instruments, particularly short-term second mortgages.

[6] The extent to which the shifting of economic power and the imposition of new responsibilities upon business caused short-term plans to be preferred to long-term plans is roughly indicated by comparing for the two periods 1922-29 and 1933-39 expenditures on equipment in relation to expenditures on plant. Since expenditures on equipment are in large measure for replacement and expenditures on plant are in the main for the enlargement of capacity, the change in the relation between the two roughly illustrates the change in the importance of expenditures on long-run plans in relation to expenditures on current needs. Between 1922 and 1929, 81.3 cents were spent by business enterprises on plant for every dollar spent on equipment; between 1933 and 1939, only 44.5 cents were spent on plant for every dollar spent on equipment. Between 1922 and 1929, expenditures on plant were 29,774 million dollars and on equipment 36,626 million dollars; between 1933 and 1939, expenditures on plant were 10,850 million dollars and on equipment 24,155 million dollars.

rise in the national income (21.1 billion dollars) to a level of 71.4 billion dollars produced a gain of 3 billion dollars in profits. When profits come hard, the disposition to venture is weak.

The lesser success of enterprises in converting a rise of business into profits after 1933 than after 1921 is explained by a variety of circumstances, but very largely by the movements of labor efficiency and wages. Physical productivity per man-hour grew twice as fast after 1921 as after 1933 or 1934, but wage rates went up twice as rapidly in the second period as in the first. These differences were not entirely compensated by price movements.[7]

V

During the period when shifts in economic power and public policy substantially reduced the attractiveness of long-range plans, government fiscal policy was developing in ways that greatly reduced the marginal efficiency of capital and especially diminished the attractiveness of ventures involving considerable uncertainty and risk. To begin with, a large deficit in the regular budget persisted undiminished, except for one year,

[7] Between 1921 and 1923, man-hour productivity in manufacturing increased 3.06 per cent per year as against 2.0 per cent between 1934 and 1937. In mineral industries it increased 7.1 per cent a year in the first period and 5.0 per cent in the second; in railroading, 4.3 per cent in the first period, and 3.8 per cent in the second. (S. Bell, *Productivity, Wages, and National Income,* pp. 269, 271, 274.) Hourly earnings in manufacturing increased 3.2 per cent between 1921 and 1923, according to the National Industrial Conference Board. Between 1934 and 1937, hourly earnings in manufacturing increased 15.7 per cent according to the U.S. Bureau of Labor Statistics, and 19.6 per cent according to the National Industrial Conference Board.

In some respects it is more satisfactory to compare the period 1921 to 1926 with the period 1933 to 1937. In the first period man-hour productivity in manufacturing increased 4.3 per cent a year as against 1.7 per cent in the second; in the mineral industries, it increased 8.0 per cent a year in the first period and 3.7 per cent in the second; in railroading, it increased 3.3 per cent per year in the first period and 3.0 per cent in the second. Between 1921 and 1926, hourly earnings in manufacturing rose 8.4 per cent; between 1933 and 1937, 40 per cent.

In the case of electric light and power, productivity per man-hour apparently increased more rapidly following 1933 than following 1921—6.9 per cent a year between 1933 and 1937, instead of 2.8 per cent a year as between 1921 and 1926. The actual difference was probably considerably less than the figures indicate because there was much more construction in the industry in 1926 than in 1937. Some of the construction is done by outside contractors whose employees are not counted as in the industry. Much of it, however, is done by employees of the utilities. As the construction is not counted as part of the product of the industry, the use of employees of the industry tends to reduce the output per man-hour. The changing proportion of employees working on non-current operations (together with the changing proportion engaged on maintenance and repairs as maintenance is now postponed and then accelerated) makes all figures on man-hour productivity more or less unreliable. In the case of comparisons between 1921-26 on the one hand, and 1933-37 on the other, the changes in construction and in maintenance policy probably cause the difference in increase in efficiency to appear to be less than it really was.

Finished goods declined relative to raw materials in both recoveries (as is usual)

in the face of a substantial rise in the national income and of large increases in taxes. Deficit financing is too new to be well understood. We are still in the stage of trying to find out why the course of events does not correspond to the theoretical models. Nevertheless, it is possible to see why deficit financing at the best is an unreliable device and why it may do little good and may even impede an expansion of privately produced income. Since the saving function is considerably more elastic relative to national income than the investment function, a relatively large deficit is necessary to raise the national income by a small amount. But a deficit may cause the investment function to shift to the left, especially if it arouses the expectation of higher taxes and if the government has manifested a strong propensity to tax profits. In this event, all or nearly all of the stimulus of the deficit may be canceled.[8] When

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but more so in the second recovery than in the first. The following are the indexes of wholesale prices of raw materials and finished goods:

Year	Raw materials	Finished Goods
1921	88.3	103.3
1922	96.0	96.5
1923	98.5	99.2
1926	100.0	100.0
1933	56.5	70.5
1934	68.6	78.2
1935	77.1	82.2
1936	79.9	82.0
1937	84.8	87.2

A comparison of 1926 and 1937 is of interest. Output per man-hour in manufacturing in 1937 was apparently 33.2 per cent above 1926, hourly earnings 22.4 per cent above 1926. Finished goods were slightly higher relative to raw materials than in 1926. Nevertheless, non-financial corporations made profits of only 3.8 billion dollars on sales of 108.4 billion dollars in 1937, as against profits of 5.8 billion dollars on sales of 106.2 billion dollars in 1926—a margin of 3.54 cents per dollar of sales in 1937 and of 5.44 cents in 1926.

[8] Satisfactory information on the saving function is virtually impossible to obtain because the relation of consumption to income payments has been affected in recent years by changes in taxes and other conditions. These changes may or may not be permanent. Further changes appear to be ahead. At any rate, they indicate that attempts to deduce the saving function from time series are likely to have little significance for the future. Such information as is available indicates that in the range between a national income of 60 billion dollars and 80 billion dollars there is an increase of about 40 cents in saving for one dollar increase in income. Hence, a persistent deficit (or an increase in investment) of 4 billion dollars is necessary to raise the national income by about 10 billion dollars. If the persistence of the deficit were to produce an unfavorable shift in the investment function sufficient to cut private investment from 7 billion dollars to 5.25 billion dollars (or 25 per cent) at a national income of 70 billion dollars, almost half the benefit of the deficit would be lost. A shift of even greater magnitude in the investment function might easily be produced by expectations of higher taxes. During the last decade deficits have been working most of the time against a sharply declining marginal propensity to spend or invest additional income, as the drop in the velocity of bank deposits outside New York from 28.0 in 1933 to 22.6 in 1939 and 21.6 in 1940 plainly indicates. Of course, the drop in the marginal propensity to spend must be attributed to a variety of causes, but one of

neither rising national income nor rising tax rates reduced the deficit, who could avoid concluding that substantially higher taxes were ahead, and that, in view of the record, they might fall in substantial measure on profits?

To the influence of the deficit in producing an unfavorable shift in the investment function must be added tax changes well designed to discourage innovations and experimentation and to reduce the attractiveness of risky ventures. Between 1929 and 1936, the effective rate of the corporate income tax was virtually doubled.[9] It is no answer to say that the tax is eventually shifted, because it is passed on only by restricting the volume of investment. And since corporate profits are produced in a large measure by innovation and experimentation, doubling the tax on corporate profits amounted to doubling the tax on innovation and experimentation.

Some changes in tax laws were especially well designed to penalize chance-taking. The loss carry-over provision in the corporate income tax was limited to one year in 1932, abolished in 1933, and not restored until 1938. Capital losses, which had been fully deductible up to 1932, were deductible only to a very restricted degree throughout the entire critical period between 1932 and 1938.

Similar changes on an even more drastic scale were made in individual income tax rates. Until 1932, the highest surtax rate was 20 per cent, applicable on incomes over $100,000. In 1932 surtaxes were greatly raised. They were raised again in 1934 and 1936. Dividends from corporations were made subject to the normal tax in 1936. By 1938, the normal tax and surtax took 35 per cent of additional income immediately above $50,000; 51 per cent immediately above $74,000; and 62 per cent immediately above $100,000. How drastically tax increases reduced the marginal returns on investments in equities by the persons who did the most saving is illustrated by the fact that by 1938 a man with an income of $50,000 would need a yield of 8 per cent before his tax to obtain a return of 5.4 per cent. At the same time, the capital loss provisions of the income tax were modified to narrow greatly the opportunity to deduct capital losses.[10] In other words, the govern-

them seems to have been a conjunction of persistent deficits with a disposition to increase those taxes which must directly limit the marginal efficiency of capital.

[9] The base rate, which was 11 per cent in 1929, was raised to 12 per cent in 1930 and 13.75 per cent in 1932. The consolidated return was abolished for all corporations except railroads in 1934, intercorporate dividends were taxed in 1935, a tax on undistributed profits was added in 1936. Other changes which increased the effective burden, such as abolition of the loss carry-over and restriction on credits for capital losses, are discussed below. The corporate income tax was further increased by substantial additions to the base rates in 1938 and 1939, not to mention the subsequent increases required by the defense program.

[10] Up to 1932 capital losses could be deducted in full for periods up to two years. Above two years the taxpayer had the option of paying 12½ per cent as a tax or deducting 12½

ment was greatly increasing the difficulty of adding to one's capital by successful ventures and at the same time was severely limiting the possibility of charging unsuccessful ventures against successful ones. Can one imagine a better arrangement for encouraging investors to avoid venturesome commitments?

VI

What of the long-range outlook? If to shifts in economic and political power, which have already created difficult problems, is added a narrowed opportunity for extensive investment, does not the problem of providing employment become so formidable as to require great changes in policies and institutions?

One may assert with reasonable confidence, I think, that the consumption function will slowly become more favorable to employment. For more than a generation the propensity to consume has been rising just about fast enough to prevent the increase in per capita incomes from causing a drop in the proportion of the national income currently consumed. It is noteworthy, however, that in the twenties, despite the rapid rise in per capita income, capital formation was relatively less than in the preceding decade—19.6 per cent of gross product as against 22.8 per cent.[11] In the post-war world, the propensity to consume will be higher than in the twenties. Corporations will be hampered, as they have been for nearly a decade, in devoting part of their income to capital

per cent as a loss. The act of 1932 greatly restricted the deduction of short-term losses and the act of 1934 restricted the deductions of all capital losses to the amount of capital gains plus $2,000.

Mr. Alexander Sachs stresses the deterring effects in the act of 1938 of the disconnection between long-term and short-term gains and losses. If a long-term gain and a short-term loss are realized in the same year, the latter cannot be used to offset the former. Furthermore, if the short-term gain is not realized, the enterpriser is exposed to the danger that, in the event of the gain's becoming a loss, it can be credited only to the extent of 15 per cent or 20 per cent.

[11] S. S. Kuznets, "Capital Formation, 1879-1938," *University of Pennsylvania Bicentennial Conference*, p. 70.

The real rise in the individual propensity to consume was considerably more than is indicated by the figures of gross capital formation. The change in individual propensities to consume cannot be inferred entirely from the proportion of output devoted to capital formation. In the twenties a considerable increase in public capital formation (roads and bridges) was financed by new taxes such as gasoline taxes. Such capital formation, of course, represents no increased disposition on the part of individuals to save. It may be thought that the proportion of income devoted to consumption was abnormally high in the twenties because of the making of purchases postponed during the war and the liquidation of Liberty Bonds for that purpose. This may have been true for the first several years of the decade. But annual figures on capital formation indicate that the proportion of output devoted to capital formation tended to decline between 1923 and 1929, despite a rise in per capita real income.

Capital formation by corporations was facilitated by the fact that managements were not under pressure to restore previously high dividend rates and hence were fairly free to plow back a large proportion of increased earnings.

formation by pressure from stockholders to maintain dividend rates.[12] Post-war tax collections by the federal government will probably be at least twice pre-war. The additional amounts will be collected largely from the middle incomes.[13] Much of the saving of recent years has been temporary rather than permanent. This is true of the saving represented by premiums for life insurance, annuities, and pensions which in the main are intended to be consumed rather than to provide permanent sources of income. Benefit payments of life insurance companies are gradually catching up with their premium receipts and eventually the difference between the two will be little greater than the operating expenses of the companies.[14]

Too much importance, however, must not be attached to prospective changes in the consumption function. If there is a decline in the disposition to take risks in order to increase capital, and a rise in the desire to avoid risks in order to conserve capital, a drop in thriftiness may be accompanied by a rise in unemployment.[15] The large shift in the con-

[12] It is not generally known that throughout the recovery until 1939 dividend disbursements each year exceeded corporate earnings by a billion dollars or more.

[13] Satisfactory data are not available for estimating how much a higher tax burden would reduce savings in the middle incomes. One may roughly estimate, however, that in the case of incomes from $10,000 to $50,000 a year every additional dollar taken in taxes will reduce the volume of saving by 25 to 50 cents. The higher taxes will tend also to affect the slope of the function, making less pronounced the rise in the volume of savings which accompanies a rise in income. It might appear that this change, while making the economy more responsive to any stimulus, would also make it more unstable. This tendency will be largely offset, however, by the spread of unemployment insurance.

[14] Prior to 1929 the premiums of life insurance companies were increasing far faster than payments to policyholders. Between 1929 and 1940 the payments of life insurance companies to policyholders increased more than premium payments. Between 1929 and 1940 total premium income of life insurance companies increased from 3,350 million dollars to 3,944 million dollars, or 594 million dollars. Payments to policyholders increased from 1,962 million dollars to 2,681 million dollars, or 719 million dollars. (*The Spectator Life Insurance Yearbook*, 1935, pp. 414-15; and 1941, p. i.)

The disposition to save in years immediately after the war will be affected by the extent to which individuals and business enterprises reduce their debts during the war. Reduction of private indebtedness will assist in financing the war, provided creditors put the proceeds into government bonds. Reduction in mortgage indebtedness and installment debts should be encouraged both to finance the war and to create the basis for a high level of consumption in the years after the war.

A large rise in the price level during the war may have the net effect of raising the post-war propensity to save, because it will probably induce some attempts to restore the purchasing power of savings or of the income from savings.

[15] This is simply one way of saying that a favorable shift in the consumption function may be offset by an unfavorable shift in the schedule of liquidity preference. The desire for security of principal will be satisfied to a considerable extent by holding idle cash in the event that venture capital is not sufficiently abundant to provide a satisfactory cushion for new fixed income securities. There are several elements in thriftiness and they may change in relative importance. The kind of thriftiness that does most good is that which is based upon an attempt to increase one's capital.

It is possible, of course, to have steadily increasing unemployment because of an insufficiency of savings. The annual increments of investment-seeking funds may not be

sumption function in the United Kingdom between the pre-World War and the post-World War decades, as indicated by Colin Clark's estimates, did not prevent the persistence of a large amount of unemployment throughout the twenties.[16] Too much attention has been paid by recent economic theory to mere changes in the amount of thriftiness and too little to changes in the kind of thriftiness and to shifts in the propensity to invest.[17]

VII

The effect of the drop in the rate of population growth upon investment opportunity might seem to depend in the main upon how rapidly the marginal return on capital falls as capital per worker increases. Except for the investigations of Douglas, little work has been done on this point. The problem, of course, is not how marginal efficiency of investment behaves under static conditions but how it behaves under the rate and kind of technological change and the price movements that may be expected to occur. It is highly probable (though not inevitable) that technological change will increase the amount of capital that each worker can advantageously manage because inventions consist largely of making apparatus more automatic and adding automatic attachments. Douglas estimates that an increase of 270 per cent in fixed capital per worker in manufacturing between 1899 and 1922 was accompanied by a drop of 44 per cent in the marginal physical productivity of capital.[18] This is not a rapid drop and it occurred when technological research was on a far smaller scale than it is now. It is interesting to observe that the drop in the marginal physical productivity of capital was accompanied by a large rise in interest rates.[19] This contrast between the movement of interest rates and the marginal physical productivity of capital suggests in how great measure the marginal return

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sufficient to provide plant and equipment necessary to enable the increment of workers to earn the prevailing scale of wages.

[16] Colin Clark, *National Income and Outlay*, p. 185.

[17] Liquidity preference appears to be sensitive to changes in investment opportunity. An improvement in the marginal efficiency of capital not only produces more investment under a given state of liquidity preference but also actually changes the state of liquidity preference; that is, produces a shift in the schedule of liquidity preference. Likewise, a drop in the marginal efficiency of capital produces a rise in liquidity preference. Furthermore, a rise in liquidity preference produces a drop in the marginal efficiency of capital and hence a further rise in liquidity preference. Because the marginal efficiency of capital and the schedule of liquidity preference are not independent variables, a change in either one of them is more important in determining the capacity of the economy to expand than changes in the consumption function.

[18] P. H. Douglas, *The Theory of Wages*, pp. 121, 125, 130, and 146.

[19] Macaulay's index of the adjusted yield of railroad bonds rose from 3.182 in 1900 to 5.168 in 1920. F. R. Macaulay, *The Movements of Interest Rates, Bond Yields and Stock Prices in the United States Since 1856*, pp. A 152, A 157.

on capital is determined by price trends and by expectations.[20] Of course, if the United States by any chance were able to arrange its affairs to permit the exportation of capital on a considerable scale in the post-war world, the problem of opportunities for extensive investment would be a generation or two in the future.

Technological research is growing rapidly, as the ninefold increase in personnel in twenty years indicates, and it will undoubtedly continue to grow rapidly. Indeed it must now be regarded as one of the most important instruments of economic adjustment. But even today there are only about 3,500 industrial research laboratories in the country. Out of over 100 billion dollars of sales by corporations only 300 million dollars goes into industrial research, or less than one-third of one per cent. Virtually half of all industrial research is done by four industries—chemicals, petroleum, electrical apparatus, and electrical communications. In 1940, there were about 15,000 chemists in industry and about the same number of engineers, but only 2,000 physicists.[21] Some people believe that the present war will put the physicists into industry in much the same way that World War I put the chemists into industry. Private enterprise has never yet had to face squarely the question of whether it is able to provide over the long term the amount of employment which the community expects. When it is confronted with this question, the expansion of industrial research may be considerable. Likewise one may expect considerable expansion of "new product" departments charged with the responsibility of discovering opportunities for new products and assisting in their development. Only a few concerns now possess such departments. Little has been attempted by public policy to make industrial research more easily available to small enterprises. All of this points to the conclusion that industrial research is in its infancy and that it offers a way of providing investment opportunities that will be far more important in the future than in the past.

VIII

By the end of the war, roughly one-third of the pay rolls of industry will be directly determined by collective bargaining. Wage rates in

[20] As men were thrown out of work in the capital goods industries through failure of the increase in the working force to create opportunities for extensive investment, the unemployed would become available for employment in new plants and on new machines and thus would furnish opportunities for extensive investment. But the idle plant produced by the contraction of employment would limit the return on new investment and thus tend to discourage it. Whether or not unemployment produced extensive investment, therefore, would depend upon the terms on which the unemployed would accept work. They would need to be willing to accept employment at sufficiently below current rates to make new investment opportunities attractive despite the existence of idle plant and machines.

[21] National Resources Planning Board, *Research—a National Resource*, vol. II, *Industrial Research*, pp. 176-77.

many nonunion plants will be sensitive to changes in union scales. The marginal efficiency of capital depends, among other things, upon the control of management over costs. In the face of large and powerful labor organizations, will American business possess sufficient control over costs to maintain a high marginal efficiency of capital? Or will unions keep investment opportunity limited by promptly converting any increase in demand for labor into higher wages?[22]

Many economists believe that bargained changes in costs are bound to be completely translated into higher prices, so that changes in the general wage level produce solely price effects and not output or employment effects. The relationship between bargained changes in costs and prices is undoubtedly the most important issue in the theory of employment. The conclusion that rises in costs are translated into higher prices so that the return on investments is not affected presupposes, among other things, a self-contained economy. But even in a self-contained economy, the assumed relationship between costs and prices requires a theory of liquidity preference which is not convincing. It is assumed that higher wages reduce liquidity preference and that the shift in the schedule of liquidity preference so increases the volume of active deposits that prices rise in proportion to the advance in wages. All of this amounts to assuming that the volume of deposits held idle is a residual and that it is independent of the purchasing power of the idle deposits.[23] These assumptions are far from realistic. If general increases in the wage level cannot be counted on to produce offsetting increases in expenditures and prices, a rise in labor's bargaining power will tend to reduce the marginal efficiency of capital.[24] The resulting

[22] In other words, will unions prevent any expansion of demand from producing more employment by causing it to produce higher wages?

[23] Suppose that the first reaction of managements to a rise in costs were to advance prices in proportion. To sustain the higher price level the public would have to be willing to hold a smaller amount of real purchasing power in cash. It is not clear why a rise in prices should produce this result, except as higher prices reduce the purchasing power of incomes. This might produce some tendency to reduce idle deposits. But the drop in the purchasing power of money would also limit the decrease in idle deposits since the quantity of money which people desire to hold idle is presumably affected by its purchasing power. Equilibrium would eventually be reached at some point below the original volume of output and employment, but with money expenditures somewhat above the original level. In the above analysis, it is assumed that the demand for assets in the form of idle deposits is such that idle deposits drop as the purchasing power of money drops. It is possible, however, that a drop in the purchasing power of money will cause an increase in the number of dollars held idle. In that event an effort to pass on an increase in costs in the form of higher prices would produce an even greater drop in output and employment.

[24] It is conceivable that wages might get so low and that such a large proportion of the national income might go to savings and such a small part to labor that further reductions in wages would cause more than a proportionate drop in total expenditures. As the increase in investment-seeking funds produced a drop in the marginal return on investments, the proportion of money held idle would increase. Eventually it would increase so rapidly as more than to offset the effect of the drop in costs and prices upon the physical

unfavorable shift in the investment function is not offset within the usual range of national income by the favorable effect of the redistribution upon the savings function.

The problem which confronts the individual investor or the enterprise is not the effect of general increases in wages on prices, but the effect of the spread of union organization upon the probable return from a particular investment. When one examines this matter, it is difficult to avoid the conclusion that large and powerful unions tend to reduce the marginal efficiency of capital. It is true that collective bargaining frequently raises plant efficiency by giving management better information about conditions and by giving representatives of the men an opportunity to point out mistakes of management. Nevertheless, powerful unions increase the likelihood that successful concerns will have to share their prosperity with the employees. Until recently there has been no offsetting protection against losses. The development of the policy of union-management coöperation during the last twenty years has interesting theoretical implications. Most of the coöperative plans have been started in high-cost plants. They have been a way by which the workers in these plants tried to safeguard their jobs. If union-management coöperation were to become widespread in high-cost plants, it would go far to offset reduction in the marginal efficiency of capital produced by the encroachment of unions on the profits of the most successful concerns. For the time being, however, one must conclude that the spread of unionization tends to reduce the marginal return of capital.

Are unions likely to reduce the return so seriously as to limit materially the capacity of the economy to expand? That is a possibility, but not a necessity, as the experience of the United Kingdom and Sweden shows. One may assert with confidence, I think, that even a large and powerful labor movement will be less harmful to expected returns on investments than the shift in power that has been going on since 1933.[25]

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volume of transactions. Hence two zones might be distinguished: one in which expenditures change proportionately less than changes in wages and in which wage increases are unfavorable to employment; and one in which expenditures change proportionately more than changes in wages and in which wage increases are favorable to employment. In the former zone, the usual one, the effect of wage changes on the investment function would not be offset by their effect upon the savings function; in the latter zone, the effect of wage changes upon the investment function would be offset by their effect on the savings function. The latter zone would appear to be an unstable one because wage increases, by reducing unemployment, would produce more wage increases and because wage cuts, by producing more unemployment, would produce more wage cuts. As a matter of fact, wages in relation to prices apparently never get down into the zone of instability.

[25] Such a period of shifting creates great uncertainty over the future of costs. In the face of such uncertainty managers may be more reluctant to make long-term commitments than they would be after unions are better established and stronger but when economic

There is nothing fixed or inevitable about the way in which collective bargaining operates and the effects which it produces. I have in mind a case where union policy has reduced output per man-hour over 40 per cent in seven years. I have in mind also a steel mill where the president recently said that he would not sell his plan of union-management coöperation for a million dollars. Such are the possible extremes. Management has it within its power to influence greatly the way in which collective bargaining operates. As managers become reconciled to the necessity of dealing with trade unions, they may be expected to be increasingly successful in gaining help on operating problems from unions. The effect of collective bargaining upon the marginal efficiency of capital will also depend upon the willingness of employers to organize. American employers have always been reluctant to organize for the purpose of dealing with labor. Most of their existing bargaining organizations are flimsy affairs with little discipline and meager resources. The success of collective bargaining in Sweden and the United Kingdom is largely attributable to the way in which the return on capital has been protected by large and powerful organizations of employers.

IX

The readiness with which an economy translates the results of technological progress into new investment, the resistance which it shows to depression, and the ease with which it recovers depend in large measure upon the willingness of individual enterprises to increase their expenditures for equipment and for the development of new products more or less regardless of the general business situation—to step out in advance of other concerns and make commitments. In other words, it depends upon the relative attractiveness of venturesome and daring production plans in comparison with cautious production plans. The dynamic influence of venturesome production plans has been underrated in recent economic analysis, largely because the contagious effect of investment by one firm in compelling offsetting investments by rivals has received little attention.

The government, through the way in which it raises its money, has wide discretion in determining the relative attractiveness of different types of production plans. This is especially true when the government

power is no longer shifting. It is to be observed also that the large wage increases between 1936 and 1937, when the hourly earnings of factory workers increased by 12 per cent, were not in the main directly produced by trade unions. In large measure they represented an unsuccessful effort on the part of employers to stop the spread of labor unions. As a matter of fact, the wage increases seem to have stimulated the growth of unions by convincing the men that there was a lot of easy money around which they might get by organizing. Some employers who gave a wage increase to prevent their men from organizing had to give a second increase after the men had formed a union.

takes such a large proportion of individual and corporate incomes as it now does. Taxes in recent years have been remarkably well designed to bear heavily on any enterprise which displays daring, which backs an innovation or an experiment, especially an experiment which is pretty certain to experience losses for several years. The loss carry-over provisions of the corporate income tax could be modified, for example, to facilitate substantially the accumulation of capital by new concerns. In times of poor economic visibility and rapid technological change, much is to be said for a flexible treatment of depreciation allowances. Enterprises should be encouraged to write off half of the cost of new assets during the first three or four years of their life. This would increase the subsequent tax liability of the concern, but it would make uncertain ventures less risky. A large reduction in the tax on that part of corporate profits spent for plant and equipment (the reverse of the undistributed profits tax) would help restore the practice of plowing back earnings—so important if new concerns are to furnish stiff competition for old ones and important in the case of all concerns in stimulating the kind of investment which starts expansion and improves the ability of the enterprise to attract funds from the outside. A similar principle might be applied to the personal income tax. In the case of this tax there is conflict between the community's interest in the principle of ability to pay and its interest in expansion. Stiff surtaxes greatly reduce the marginal efficiency of any investments made by large income recipients. These surtaxes are in conflict with prevailing theories of liquidity preference. It would not be necessary to repeal the surtaxes. The attractiveness of uncertain ventures to large income recipients (or even persons in the middle brackets), could be increased by a substantial reduction in the surtax on that part of income invested in non-refunding equities.[26]

X

The ability of the community to supply itself with enterprise will depend also upon the organization of the capital market. At the present time this is in a state of flux, partly because of recent legislation and partly because changes in the tax system require that machinery be developed for obtaining venture capital from income brackets which have provided little of it. It is important to realize that neither the volume of investment opportunities nor the volume of investment-seeking funds is fixed. Each is the result of discovery and of effort. It

[26] The effect of the tax upon production plans depends in substantial measure upon whether enterprises are discounting increases or decreases in taxes. Post-war adjustments will be greatly assisted if enterprises are discounting decreases in taxes. Certainly the prospect of tax reductions was an important stimulus to business during the five years following the First World War. If one may assume post-war federal budgets not in excess of 14 to 15 billion dollars a year, the prospect of reduction in taxes would be good.

takes work and money to find good credit risks which could use funds and to find people who might be persuaded to buy particular types of securities. Many men make their living by doing these things. How dynamic the economy is able to become will depend partly upon how good a job is done in adapting the machinery of the capital market to new conditions.

XI

To a very substantial extent, of course, the opportunities for investment will be affected by the policies which the United States elects to pursue toward the rest of the world after the war. If conditions are reasonably stable, opportunities will exist for large international movements of capital and for extensive investment on a broad scale. Indeed, the potentialities of this are enormous. Here we see perhaps more plainly than ever how dependent investment opportunity is upon policy, for the problem of providing the basis for large international capital movements which will greatly raise the standard of living of the entire world is, in the main, a political one.

XII

One may infer from this survey that the outlook for employment during the post-war generation is not necessarily dark. In fact, it may turn out to be distinctly good, especially in the event, by no means improbable, that the country is able to create favorable conditions for large capital exports.[27] But my purpose in this analysis has not been to speculate about the future, because anything can happen. Rather my purpose has been to focus your attention upon certain characteristics of our economy. The conclusion to which I invite your attention is that most of the variables which determine the amount of private employment and the rate of expansion are influenced within wide range by policies, public and private. This is true of the relation between costs and prices; of the way in which cost curves shift in response to changes in demand; of the quantity of resources, public and private, devoted to technological discovery; of the disposition to venture, and the relative preference for various types of production plans; of the position and income elasticity of the savings function. No fixed or inevitable values may be assumed for these determinants of expansion. Hence

[27] Should the defeat of Germany mean domination of Europe by Russia, the economic future of the United States will be determined in great measure by Russian economic and political policy. If American business men are sufficiently ingenious to develop a large market here for Russian goods and if Russia does not revive her policy of world revolution, the possibilities of a large and mutually advantageous exchange of goods between Russia and the United States are bright. The pre-war experience of Germany, the United Kingdom, and the United States indicates that trade need not be in the main between industrial and agricultural countries.

there is no fixed amount of investment opportunity, no fixed willingness to take chances, no fixed demand for goods or for people to make goods. All depend upon conditions, and all may be greatly influenced by policy.

Some of the policies which determine the volume of employment represent a deliberate choice between employment and something else. There may be a clash, for example, between the interest of the community in full employment and its preference concerning the distribution of wealth. Since tax changes which would raise the marginal return on investments by the well-to-do would facilitate the acquisition of large fortunes, the community may accept a limited amount of private employment in order to achieve a more even distribution of wealth.[28] The policies which represent a deliberate and informed choice between employment and something else are not our problem. Many of the policies which affect employment, however, are not intended to do so. The groups which produce the policies are too small to consider their consequences for employment and yet the total effect of the policies of thousands of organizations of business men and farmers, thousands of local unions, and many states, counties, and cities upon cost-price relationships and upon the opportunity to experiment and to introduce innovations is considerable.

Because many policies are pursued without regard to their effect upon the general level of employment, the persistence of unemployment cannot be counted upon to produce the changes in policies which are needed to increase employment. If the bargaining power of labor, for example, is too great in relation to the rate of technological discovery so that the investment function does not permit a satisfactory level of employment, there is no automatic change in policies to reduce the bargaining power of labor, to raise the rate of discovery, or to produce a shift in the propensity to save. These things *may* happen, but they cannot be counted upon to happen. In fact, the response of policies to unemployment may in the main be bad: unemployment may provoke a flood of attempts to protect markets by restrictions which narrow the area of innovation, cut the marginal return on investments, and produce unfavorable shifts in the schedule of liquidity preference. Numerous examples of this kind of response to unemployment can be gathered from the recent depression both in the United States and abroad.[29]

[28] One of the broadest conflicts in the community is the competition between the old and the new. Much intervention on behalf of the government is simply a way of protecting the old from the competition of the new. Of course, the farther the government goes in protecting the old from the new, the more it limits investment opportunity and, to that extent, employment. But most of the community may prefer less private employment to a faster rate of change.

[29] The most conspicuous illustrations can be drawn from the field of international economic policy, but many others could be cited.

If the level of employment is unsatisfactory from the standpoint of the community, who is to assume responsibility for seeing that policies are modified or broadened so as to permit the largest amount of employment compatible with the other interests of the community? To some extent the government can assume this responsibility. The government has three principal ways of affecting the general level of employment: (1) the method of correction, (2) the method of compensation, and (3) the method of stimulation.

The method of correction involves making changes in public policies or forcing changes in private policies in order to increase employment or, put in other words, altering the distribution of economic advantages in order to increase the total amount of income.[30] Many public policies—tax policies, regulation of security markets, price-pegging schemes—were adopted without an appraisal of their probable effect upon employment and even without a suspicion that there was a problem of maintaining employment. Recognition of the existence of such a problem may lead the community to prefer to revise many of its policies. The policy of correction would also involve the assertion of some public control over private policies. There are various ways by which the government might exercise such control, but on the whole the possibilities are limited because, in many cases, control cannot be accomplished without a large number of detailed regulations which would be impracticable to administer.

The method of compensation involves an attempt by deficit financing to offset the failure of private enterprise to provide a satisfactory amount of employment; note that I do not say "full employment." Strictly speaking, the method of compensation should not be used until the community has gone as far as it is willing to go in applying the policy of correction. Otherwise, the policy may divert the government from thoroughly exploring the possibility of enforcing changes in private policies that would raise the level of employment. In fact, the persistent use of the policy of compensation may stimulate a development of private policies that are unfavorable to employment. Why should an up-and-coming labor movement, for example, permit the demand created by public spending to produce more employment rather than higher wages?

The use of deficits to compensate for a chronic shortage of investment opportunities raises very different economic issues from those involved in the use of deficits in periods of depression when there are

[30] One might visualize as an ideal a central planning agency charged with the responsibility of reviewing the obstacles limiting the amount of enterprise and of estimating how much sacrifice by different groups would produce how much expansion in employment. These reports might be referred to representative agencies to determine which interests to sacrifice for the enlargement of income.

idle resources of all sorts. Although the tax expectations aroused by a persistent use of deficits do not necessarily reduce the marginal efficiency of capital, as a practical matter it is very difficult to prevent this effect. There are also likely to be important differences in the economic effects of public and private investment which prevent the former from being merely an offset to the latter. Private investment, being intended to yield a profit, represents an attempt to anticipate trends in consumer demand and thus to keep the pattern of productive capacity adjusted to the pattern of consumer demand.[31] To the extent that this happens, private investment tends to produce a rise in output and employment rather than in prices. Public investment, on the other hand, does not as a rule represent an attempt to adjust productive capacity to consumer demand. Hence, if public spending occurs on a large scale after plant is fairly well employed, its effect will be in the main to raise prices rather than to increase employment. Consequently, the policy of compensation seems to have a much narrower application than most of its proponents have assumed.

The method of stimulation involves expenditures by the government which are designed to produce favorable shifts in the private investment function. Expenditures on roads or air ports and, in some instances at least, on rivers and harbors are an example, but the outlay in fact may take a wide variety of forms. The support of agricultural or industrial research is an example. Note that the efficacy of the method of stimulation does not depend upon the expenditure's being financed by borrowing. The essence of the method is that a public expenditure (or loan) is creating a private investment opportunity which would not otherwise exist. The method is not a new one, but it is susceptible of considerable expansion.

XIII

This brief review of the possibilities of public policy leads one to the conclusion that the range within which the government can influence the level of employment is broad but, nevertheless, in a non-regimented economy, limited. Given a fairly rapid rate of technological change, a fairly even balance of power between employers and workers, and a well-organized capital market, the community with the help of the government may maintain a satisfactory level of employment. But we cannot be sure. This brings us to the final and most basic consideration. Both what the government needs to do and what the voters will permit the government to do depend in the last analysis upon the valuations

[31] How imperfectly even private investment accomplishes this result is indicated by the jerkiness with which growth occurs. Partly because the pattern of productive capacity does not accurately fit the pattern of consumer demand (and partly because of the nature of costs), the economy during periods of expansion usually presents a mixture of unemployment and inflation.

which individuals place upon group interests and common interests.[32] There are two ways in which groups may advance their interests. One is based upon a high valuation of one's special interests, and involves improving the bargaining position of the group for the purpose of getting a larger share of an income flow with little regard to the effect upon the size of the total income flow. The other is based upon a high valuation of general interests and involves restraint in pressing special claims which conflict with general interests.

It is not for the economist *qua* economist to quarrel with the valuations which individuals and groups place upon their interests. He is, however, within his scientific rights when he points out that these valuations have profound economic effects. They determine both the methods of production which it is possible to use and the quantity of goods that can be produced. High valuations of special interests can throttle production and render the government and every one else incapable of providing a satisfactory level of employment. High valuations of common interests will produce public and private policies that will prevent there being a problem of long-term unemployment.

Is it at all thinkable that groups of workers, employers, and farmers in dealing with one another and in pressing claims for legislation will be limited or guided to a substantial extent by concern for the national income? Or as these groups become more and more highly organized and more and more conscious of their particular interests, will they become less and less disposed to place high valuations on common interests? No one knows. Larger units of decision would help. Wage policy, for example, which is now made by groups too small to feel much responsibility for the general level of employment, might be made by units such as the United States Chamber of Commerce and the National Association of Manufacturers on the one hand and the American Federation of Labor and the Congress of Industrial Organizations on the other.[33] Perhaps new machinery must be invented in order that all groups may agree on the restraints that shall be placed upon their special interests and in order to make possible new ways of promoting common interests.

A lively concern for common interests by well-organized and self-conscious special groups may seem a utopian dream; but in an economy in which the policies of government and of large private groups determine employment, what substitute is there for it? The possibilities of

[32] It is not intended to deny that the valuations of the individual member of a group are molded largely by the leaders of the group. Consequently, the kind of valuations of group and common interests which emerge are determined in large measure by the kind of men who lead groups.

[33] In Sweden the recent depression produced rudimentary beginnings of a national wage policy made by the federation of employers and the federation of unions. See P. H. Norgren, *The Swedish Collective Bargaining System*, p. 303.

modern technology are tremendous. If these possibilities can be realized, no one can doubt that we are on the threshold of gaining a far better standard of living than man has ever known. Nothing can prevent us from realizing the possibilities of modern technology except unwillingness to place a high valuation upon certain common interests—particularly our interests in enterprise, experimentation, innovation. Never have the rewards of a broad view of common interests been more attractive. Never has the folly of narrowly pressing special claims been greater. The economic future of our country and of the world depends upon the clarity with which this is seen.

STATISTICAL INVESTIGATIONS OF SAVING, CONSUMPTION, AND INVESTMENT[1]

By MORDECAI EZEKIEL

I. SAVING, CONSUMPTION, AND NATIONAL INCOME

This study deals with the functional relations between national income, consumption, saving, and private investment, as indicated by statistical analyses of their behavior in the United States over the past two decades.[2] This paper considers income, saving, and consumption relations. A second paper will present the income and investment relations, and will compare them with the results shown here.[3]

The major magnitudes which are involved in this analysis are illustrated diagrammatically in Figure 1. Column I of this diagram represents the income received by producers of goods and services, after deducting costs of the raw materials consumed by producing units. The upper portion represents consumers' goods and services, the lower

[1] This report covers one of a series of studies under way during the past several years on the general interrelations of agriculture and industry. These studies have led to the conclusion that many farm problems, such as restricted domestic markets, excess farm population, and technological displacement, could find lasting solution only in reasonably full industrial production and employment. This has led in turn to reconnaissance studies in the field of industrial economics to determine basic reasons for chronic industrial unemployment and low production and to develop possible programs of action to correct those situations. The author feels that perhaps three-quarters of the farm problem lies in this field of industrial economic policy, and that programs or actions of farmers themselves can do little to correct this phase of the farm problem. Hence this exploratory work.

[2] I am indebted to John Maynard Keynes, Alvin Hansen, Gerhard Colm, Walter Salant, Hans Neisser, and A. Smithies, who read the study in manuscript and made many valuable suggestions. Credit is also due to Virginia D. Reeve for carrying through the compilation and statistical analyses of the materials for this study; for bringing together and abstracting the bibliographical material; and for preparing the first draft of the portion of the study dealing with the consumption function.

[3] Previous studies of the relations of saving, consumption, investment, and income have been less inclusive than the present study, though many of them have covered data from other countries as well as the United States. See J. M. Keynes, *The General Theory of Employment, Interest, and Money* (New York, Harcourt Brace, 1935), pp. 101-04, 127-28; R. and W. M. Stone, "The Marginal Propensity to Consume and the Multiplier, a Statistical Investigation," *Rev. of Econ. Studies*, Oct., 1938; Elizabeth W. Gilboy, "The Propensity to Consume," *Quart. Jour. of Econ.*, Nov., 1938; J. J. Polak, "Fluctuations in United States Consumption, 1919-1932," *Rev. of Econ. Stat.*, Feb., 1939; J. Tinbergen, *Statistical Testing of Business Cycle Theories;* Part II, *Business Cycles in the United States of America, 1919-32* (Geneva, League of Nations, Econ. Intelligence Serv., 1939); and Alvin Hansen, *Fiscal Policy and Business Cycles* (New York, Norton, 1941), chap. 11, pp. 225-50, with appendix by P. A. Samuelson.

portion, producers' goods and services. Both include goods and services produced by public agencies. The portion of produc:rs' goods and services above the zero line represents net capital formation. The portion below the line represents producers' goods used for the replacement of worn-out or obsolete equipment.

Column II represents all expenditures by final purchasers of goods and services, divided into expenditures for consumption and expenditures for capital formation and maintenance. Since the amounts spent for final goods and services by the buyers must exactly equal the amounts received from the sale of final goods and services by the seller,

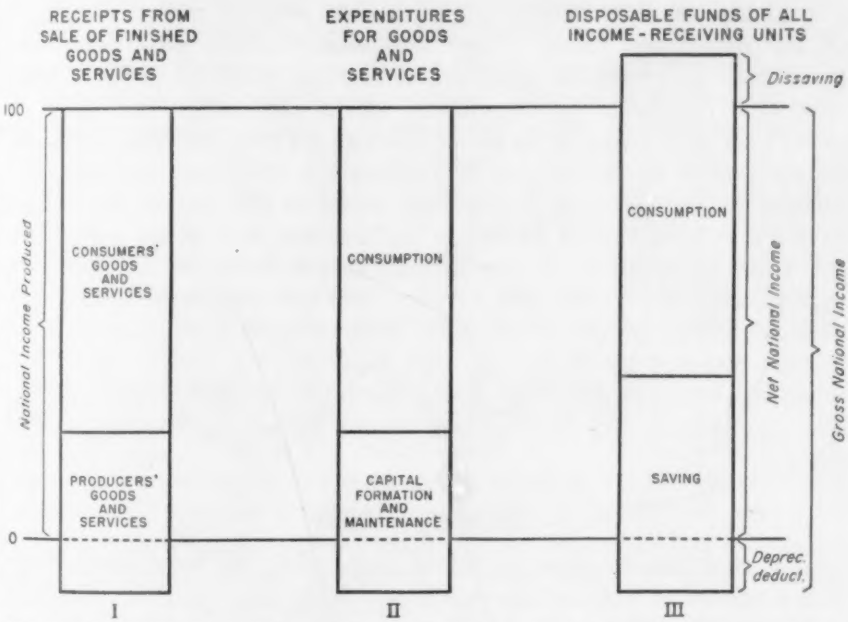

FIG. 1—Concurrent Relations of Income, Consumption, Saving, and Investment.

the two sections of Column II are the same as the two sections of Column I.

Column III represents the disposable funds received by all income-receiving units—business, personal, and governmental. The amounts set aside as deductions for depreciation and obsolescence are represented by the portion of the bar below the zero line. The upper section of Column III represents the net income used for consumption; the lower portion down to the zero line, represents the net income set aside as saving. Gross saving available for investment includes both this net saving (above the zero line) and the depreciation and depletion deductions (below the zero line). The net saving section of Column

III includes both private saving and business saving recognized as such. If businesses make further real savings by actually spending on replacement of depreciation and obsolescence less than is set aside as reserves for that purpose, then a portion of the section below the zero line is added to the funds available for new investment.

Figure 1 is drawn to illustrate the situation when gross saving exceeds the amounts actually spent for capital formation and maintenance, including capital formation financed by public expenditures. This difference will hereafter be referred to as the "gap." As shown in the figure, funds available for consumption (the upper portion of Column III) are just as large as expenditures for consumption (the upper portion of Column II). This is made possible only by adding dissavings to the disposable funds. These dissavings include government expenditures in excess of government receipts other than for capital formation, increases in consumers' credit and other borrowing of new funds or drawing down of old savings for consumption. Dissaving is represented by the portion of Column III above the 100 line. The amount of the dissaving is precisely equal to the gap between gross saving and gross capital formation and maintenance. If for any reason the amounts added to disposable income fail to equal the gap, then expenditures for goods and services will decline, fewer goods and services will be produced and sold, national income will fall, and net income received by individuals and concerns will decline. It is only when the amounts added to disposable funds precisely equal the gap that production and income can be maintained at the levels indicated.[4]

Basic Hypotheses

It is desirable to state as clearly as possible the hypotheses which it is proposed to test, and the way in which the data are to be organized as a basis for those tests. The hypotheses are:

1. Saving is a function of the current level of income, increasing as the level of income increases, but at a higher rate.

2. Consumption is a function of the current level of net income, increasing as the level of income increases, but at a lower rate than income.

3. The patterns of thrift, expenditure, and consumption at any given level of income are habitual patterns of action, changing only gradually in time, so that changes in current income received by each group produce reasonably consistent changes in total consumption and saving.

[4] This is obviously an oversimplified statement of the saving-investment balance as developed by Keynes and others.

Statistical Measures Employed

The statistical measure used for the level of income is generally the estimate of gross national income, without correction for changes in price level. For many elements in income and expenditure, dollars are a more unvarying measure than is "real production."[5] Where consumption is related to income, the net national income is used since credits to depreciation and depletion reserves presumably will not affect consumer expenditures. Direct annual data on saving of satisfactory accuracy are not available. The Brookings studies[6] and Dr. Kneeland's estimates based on the national survey of consumers' expenditures[7] have provided estimates of private saving for two given periods, 1929 and 1935-36. In the upper income brackets these estimates are based on very fragmentary reports. Other studies have extended these estimates over longer periods, on the assumption that the proportion saved at each income level was a constant.[8] The use of that assumption makes it impossible to test its accuracy from the resulting estimates. Changes in the comparability of income-tax reports and lack of adequate current information on the distribution of incomes below the income tax levels further reduce the value of these annual estimates. Another approach has been to build up a synthetic estimate of saving from reports of insurance companies, savings banks and other institutions receiving savings, plus estimates of direct investment by the saver.[9]

Other estimates of saving have been based on the uses made of saving, as recorded in various expenditures which use up or offset current saving.[10] That is the method used in the preparation of the savings series employed in this study, as given in detail subsequently. In effect, this method estimates the volume of saving (as shown in Column III of Figure 1) by calculating the volume of capital formation and maintenance (shown in Column II) and adding to it the volume of dissaving (at the top of Column III).

[5] As is indicated subsequently, tests were also run in some of the analyses using deflated figures.

[6] Maurice Leven, Harold G. Moulton and Clark Warburton, *America's Capacity to Consume* (Washington, Brookings Institution, 1937).

[7] National Resources Committee, *Consumer Expenditures in the United States* (Washington, Government Printing Office, 1939).

[8] Clark Warburton, "The Trend of Savings, 1900-1929," *Jour. of Pol. Econ.*, vol. xliii, 1935, pp. 84-101.

[9] William H. Lough, *High Level Consumption* (New York, McGraw-Hill, 1935), pp. 280-307; and R. W. Goldsmith and Walter S. Salant, *Studies in Income and Wealth*, vol. iii, "The Volume and Components of Saving in the United States, 1933-37," pt. iv, 1939.

[10] Testimony by Lauchlin Currie and Alvin Hansen, Hearings before the Temporary National Economic Committee, pt. 9, "Saving and Investment" (Washington, Supt. Docs., 1940), pp. 3495-3559. Oscar L. Altman, "Saving, Investment and National Income," *T.N.E.C. monog. no. 37* (Washington, Supt. Docs., 1941).

These various measures of saving yield estimates which vary not only in absolute amounts, but also sometimes in direction of movement from year to year. In view of this weakness of the basic data, the conclusions must be regarded as showing general relations rather than precise measurements of facts.

The data used in the independent study of consumption are the latest estimates by Kuznets.[11] They are built up to some extent independently of the series measuring saving.

The Data on Saving

The most recent estimates of total saving, as shown by the offsets to saving series, are shown annually in Table I and quarterly in Table II.[12] The component elements of these data are as follows:

1. Expenditures for new durable producers' goods including plant and equipment. These data are built up from separate estimates for many individual industries.[13] (Various minor revisions made subsequently in the over-all figures have not as yet been carried back to these separate estimates.)

2. Expenditures for the increase (or receipts from the decrease) of the quantity of products in inventories.

3. Expenditures for new housing and other non-industrial construction.

4. Expenditures by consumers for other durable consumers' goods in excess of purchases paid for from current incomes. This definition excludes from saving expenditures for consumers' durables covered from current budgets or liquid funds of consumers, and includes only that part which is financed through net additions to consumers' credits. In periods when repayments exceed new borrowings, this results in a negative figure.

5. The net balance of buying power from foreign debits, for exports and intangibles, in excess of corresponding foreign credits, excluding gold and specie movements. These net foreign balances measure the extent to which incomes in this country were maintained by our

[11] Simon Kuznets, *National Income, 1919-38,* Occasional Paper No. 2, Nat. Bur. of Econ. Res., Apr., 1941.

[12] The annual data were first developed by Dr. Lauchlin Currie, formerly of the Federal Reserve Board, and were presented to the Temporary National Economic Committee on May 16, 1939 (*loc. cit.*). They are based in part upon estimates of new durable goods purchased annually for U.S. consumption calculated by George Terborgh, Federal Reserve Board. The data presented here are revisions of that earlier data. The monthly series from which the quarterly series is derived was developed subsequently by V. Lewis Bassie in the Division of Industrial Economics, Department of Commerce, under the direction of Dr. R. V. Gilbert. Acknowledgment is due these gentlemen and these agencies for permission to use these data.

[13] George Terborgh, "Estimated Expenditures for New Durable Producers' Goods," *Federal Reserve Bulletins* for Sept., 1939, Feb., 1940, and Feb., 1941.

TABLE I—GROSS NATIONAL INCOME AND INCOME-PRODUCING EXPENDITURES THAT OFFSET SAVING, BY YEARS, 1921–40
(in millions of dollars)

Year	Gross National Income	Income-producing expenditures that offset saving							
		Total	Equipment	Plant	Housing	Consumers' Credit	Net Foreign Balance	Inventories	Government Net Contribution
1921	63,751	9,548	2,758	2,475	2,313	−20[a]	1,327	47	648
1922	64,295	11,870	3,140	2,644	3,801	730[a]	293	514	748
1923	74,784	16,990	4,622	3,280	4,821	1,046[a]	−91	2,964	348
1924	75,161	13,279	4,343	3,307	5,229	311	530	−1,056	615
1925	79,686	17,032	4,598	3,591	5,750	842	199	1,523	529
1926	84,813	16,760	4,941	4,185	5,535	648	−39	1,246	244
1927	82,708	15,328	4,644	4,133	5,357	217	301	308	368
1928	86,167	16,039	4,743	4,103	5,019	821	518	102	733
1929	89,984	17,280	5,590	4,559	3,764	987	446	2,713	−709
1930	79,764	9,709	4,568	3,769	2,292	−613	632	−1,190	251
1931	63,901	5,360	2,940	2,182	1,734	−1,128	162	−2,278	1,748
1932	47,446	2,025	1,606	1,197	713	−1,485	132	−2,018	1,880
1933	46,217	3,225	1,503	866	461	−140	205	−1,598	1,928
1934	55,839	8,530	2,306	1,131	521	415	459	270	3,428
1935	61,681	10,312	3,092	1,260	918	858	181	273	3,730
1936	71,400[a]	14,281	4,134	1,651	1,536	1,355	−179	1,447	4,337
1937	79,400[a]	14,211	5,280	2,294	1,910	891	−5	2,749	1,092
1938	70,800[a]	8,457	3,618	1,776	1,817	−1,400	1,030	−758	2,374
1939	75,710[a]	15,165	4,289	1,852	2,270	907	781	1,415	3,651
1940	82,000[a]	17,580	5,751	2,360	2,431	1,014	1,417	733	3,874

[a] Estimated.

Note: For sources and methods, see statement submitted to the Temporary National Economic Committee by Lauchlin Currie on May 16, 1939 (*loc. cit.*). See also, Oscar L. Altman, *op. cit.*, Table 2, p. 14; and page 26, footnote 12 of this text.

receiving more from sales abroad than we paid back for purchases from abroad. These excess foreign payments, in the form of gold movements, of net credit extensions by us, or otherwise, provide a market for domestically-produced goods the same as if they were purchases of consumers' or durable goods by domestic purchasers.

6. The final item in the offsets to saving series is the government net contribution. This represents in general the excess of those public expenditures (federal, state, and local) that add to disposable private income over those tax receipts of the type that reduce disposable private income. These expenditures have been designated "income-increasing disbursements" and include:

a. Direct payments of income to individuals.
b. Purchases of materials and supplies.

c. Outlays on public works other than those made in the form of direct payments of income.
d. Loans to enable others to carry out new activities which result in the payment of income.

Thus gross public expenditures are adjusted to eliminate certain items designated as "non-income-increasing disbursements," such as refinancing mortgages or retiring public debt, since these are not likely to result in additions to consumption expenditures by the recipient. Government receipts have also been adjusted to eliminate estate and gift taxes, since such taxes are not likely to lower the level of consumption of the taxpayer.[14]

The sum of all these items, representing all income-producing expenditures other than for consumers' goods purchased from current incomes, is taken as the measure of saving and of investment. Actually, these items include two which do not constitute investment in the ordinary sense of the term.

The data on saving differ slightly from the simplified presentation of Figure 1. That diagram included under capital formation that portion of government construction which is financed out of deficit expenditures, and included under dissaving only the portion of the "net government contribution" which goes for consumer goods. The statistical data modify the arrangement slightly by including all expenditures from the net government contribution under dissaving. This would involve changing Figure 1 to split the lower section of Column II into two sections, one at the bottom representing "usual capital formation and maintenance," and a section above it representing "capital formation and maintenance covered by government deficits." The gap would then be the difference between saving and the lower (usual) section of capital formation and maintenance. Increases in the volume of consumer credit, and public borrowing for other than construction purposes, represent dissaving by the borrowing individual or government unit, and are thus offsets to saving by others.

The measure of saving used accepts the Keynesian definition that over any given income period saving and investment must be equal. The important question, however, is not whether saving equals investment in this accounting sense, but at what level of income and employment the two are equal. The way in which saving is at all times kept equal to investment determines whether income is rising, falling, or maintaining the same level. For example, if the individuals in the nation decide to save a certain portion of their expected income, but

[14] Martin Krost, ***The Measurement of the Net Contribution of the Federal Government to National Buying Power*** (Washington, Federal Reserve Board, Aug. 16, 1938, mimeo. pub.).

not all of the portion which they plan to save gets used somewhere to purchase goods and services, the level of income will fall. Since the total income of the nation in a given period is just large enough to take the current output off the market, and some of the intended output will not be salable at the existing prices, business enterprises will suffer losses and payrolls will be reduced. Contraction continues until the nation as a whole is forced to reduce its saving to an amount that can currently find investment outlets. Conversely, if the individuals of the nation plan to make new investments in excess of the amounts which as a whole they plan to save, expansion takes place. The injection of purchasing power through the creation of bank credit or in other ways causes demands to rise. Business enterprises increase operation, and production and incomes rise until the increased income of the nation as a whole can provide the extra saving needed for the new investment.

The annual amounts of saving, measured by the offsets, correspond fairly closely with the annual amounts of gross capital formation. This is evident when the two are charted together, as shown in Figure 2. Gross capital formation includes expenditures for public construction, while the saving figure includes instead the net contribution of government (explained above, page 28). The two series also differ in other respects.[15]

The Functional Relation of Saving and National Income

We can now proceed to test hypothesis 1, that saving is a function of national income. The simplest approach to this relation is presented in Figure 3. Here quarterly totals of the monthly data on saving are plotted on a time chart, in comparison with the quarterly totals of national income.[16] The data for this figure (Table II) are available only since 1929. The close correspondence between the two series is at once evident. The two rise and fall together, and the turning points are fairly close.

At the low points—1932-33 and 1938—saving reached its low while income was still declining, and turned up again as soon as the *rate of decline* in income began to slacken off. At the high, in 1929, saving also turned downward somewhat ahead of income, with the rate of

[15] The data shown in this figure are taken from Altman's monograph, *op. cit.*, pp. 13-14. See also Appendices XVII and XVIII, pp. 125-26, for a detailed breakdown of the two series.

[16] The quarterly totals of national income are derived from the Monthly Income Payments series of the Department of Commerce plus an adjustment for business savings. Data for national income produced or for gross national product are not available on a monthly basis. Since revisions in the Department of Commerce series are being undertaken, and since the estimates for quarterly business savings are necessarily rough, these totals are only rough approximations.

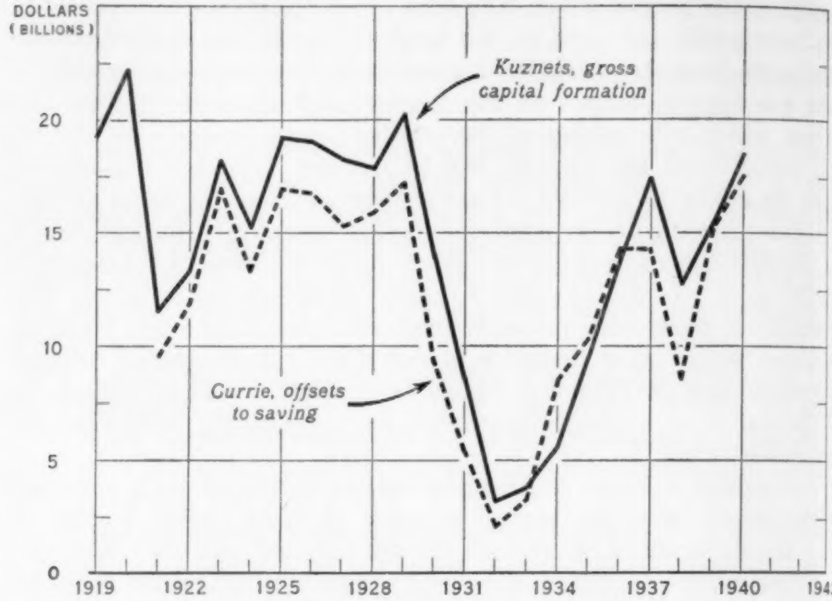

FIG. 2—Estimates of Gross Saving, 1919-40.

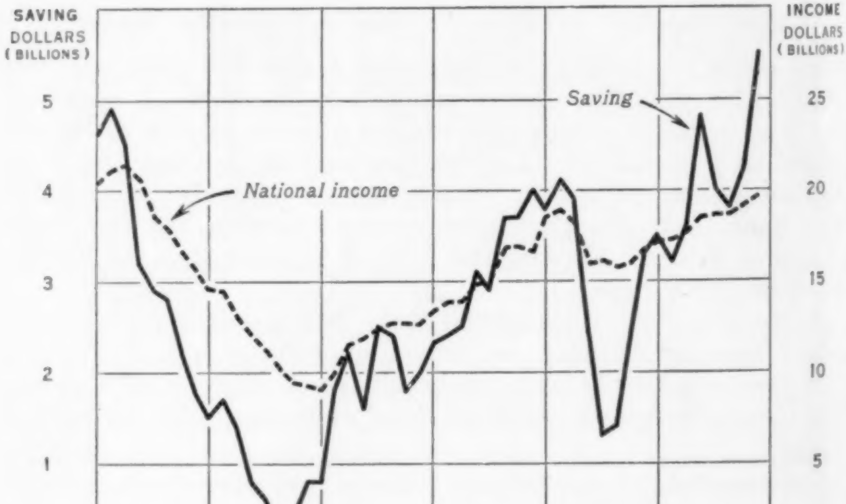

FIG. 3—Saving and National Income, 1929-40 (adjusted for seasonal variation).

decline in saving greatly accelerated as soon as income began to fall. Annual data for saving are available back to 1921. The relation of changes in saving to income from these annual data are shown in Figure 4. Here the gross national income is used.[17] Over the two decades

TABLE II—TOTAL OFFSETS TO SAVING AND NET NATIONAL INCOME, BY QUARTERS, 1929–40
(adjusted for seasonal variation)
(in billions of dollars)

Year and Quarter		Offsets to Saving[a]	Net National Income[b]	Year and Quarter		Offsets to Saving[a]	Net National Income[b]
1929	1	4.6	20.4	1935	1	2.3	13.3
	2	4.9	21.1		2	2.4	13.8
	3	4.5	21.4		3	2.5	13.8
	4	3.2	20.5		4	3.1	14.8
1930	1	2.9	18.7	1936	1	2.9	15.0
	2	2.8	17.9		2	3.7	16.8
	3	2.2	16.7		3	3.7	16.8
	4	1.8	15.7		4	4.0	16.6
1931	1	1.5	14.7	1937	1	3.8	18.5
	2	1.7	14.4		2	4.1	18.9
	3	1.4	13.1		3	3.9	18.2
	4	.8	12.1		4	2.4	15.9
1932	1	.6	11.2	1938	1	1.3	16.1
	2	.2	10.1		2	1.4	15.7
	3	.4	9.4		3	2.4	15.9
	4	.8	9.3		4	3.3	16.7
1933	1	1.0	9.1	1939	1	3.5	17.2
	2	.5	10.0		2	3.2	17.3
	3	.2	11.5		3	3.6	17.7
	4	1.6	11.8		4	4.8	18.5
1934	1	2.5	12.4	1940	1	4.0	18.7
	2	2.4	12.7		2	3.8	18.6
	3	1.8	12.7		3	4.2	19.1
	4	2.0	12.6		4	5.5	19.6

[a] For source see page 26, footnote 12.
[b] For source see page 29, footnote 16.

shown, saving and income fluctuate closely together. The peculiar lag in the relation which appeared in Figure 3 is less evident in Figure 4, apparently being concealed in the annual averages except in 1932-33.

The general relations shown in Figures 3 and 4 can be reduced to a more definite functional relation by correlating saving with income. Using annual data to simplify the presentation, the general functional

[17] The gross national income equals the net national income plus business deductions for depreciation and depletion. For derivation of this series, see Altman, *op. cit.*, p. 14.

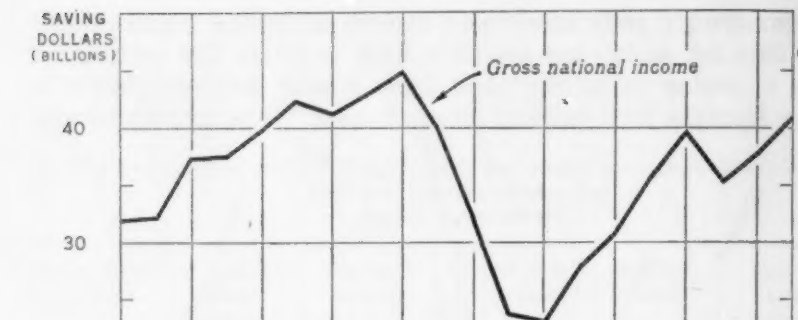

FIG. 4—Saving and Gross National Income, 1921-40.

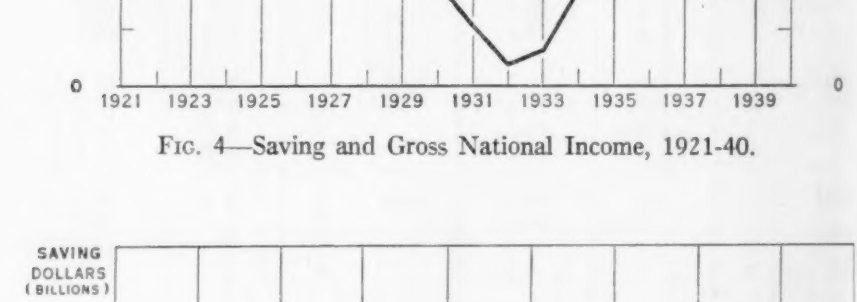

FIG. 5—Correlation of Saving and Gross National Income, 1921-40.

relation is shown in Figure 5. Here the dollar amount of saving is plotted against the dollar amount of gross national income, with a single dot representing each year. Successive years are connected by a light line, to indicate a trend if one is present, with arrows indicating the direction of the line in time.

Superficial examination of the chart indicates a marked functional relation between income and saving, with the saving for any given income falling generally within a zone of not wider than 8 billion dollars. There is no definite sign of a long-time secular trend, since the level of the data for 1934 to 1940 coincides almost exactly with the comparable level for 1921 to 1926. A continuous heavy line has been drawn in to indicate the apparent average saving corresponding to a given income. Closer examination of Figure 5 reveals an interesting fact. All the years where saving was less than would be expected for the given income (as shown by the average line) were years where the time arrows point to the left. That is, they were years with an income lower than that of the preceding year. The years when saving was higher than average, for the given income, were years of *rising* income. Years such as 1924 and 1927, with income little changed from that of the preceding year, fell intermediate between the upper and lower groups. This relation is brought out more clearly by using solid dots to designate the years of rising income, hollow dots for years of falling income, and dots half hollow and a half solid for years with little change. The way in which 1938, with a sharp fall in income, drops to the lower group is quite striking. Fulcher, in a recent study of the savings of individuals,[18] also noticed this difference in the level of the regression line in certain years, but explained it by saying "the urge to save seems to have been greater during 1933-36 than during 1926-32."

It seems clear from this superficial examination that the amount of saving is influenced not only by the size of the national income, but also by the direction of its change. Saving in years of rising income apparently usually runs about 5 billions higher than saving in years of falling income. This suggests a persistence in habits of consumption. Apparently the first effect of a rise or fall in income is to increase or decrease saving. It may be that only after that rise or fall in income has persisted for a time does consumption respond, so that a major portion of the higher or lower income becomes reflected in higher or lower consumption expenditures. This hypothesis is consistent with the facts

[18] Gordon S. Fulcher, "Annual Savings and Underspendings of Individuals, 1926-37," *Rev. of Econ. Stat.*, vol. xxiii, Feb., 1941, pp. 34-35. The diagram in Kalecki's analysis of investment and income is also similar. See Michal Kalecki, *Essays in the Theory of Economic Fluctuations* (London, Allen and Unwin, 1939), p. 71. He made an adjustment for a time lag, relating income of the present year to two-thirds of investment for the present and one-third for the preceding year.

shown in Figure 5 and also with the peculiar type of lag previously pointed out in Figures 3 and 4.

It appears superficially from Figure 5 that the level of saving for any given income is influenced only by whether income is going up or going down, regardless of how fast or slow it is rising. The data for 1928 and 1929, however, with only a moderate rise in income and with saving somewhat below what might be expected from the other rising years, suggest that the rate of increase may also be an influence. The effect of the rapid rise in stock market valuations and of large capital gains realized or imputed may also have been a factor in 1928 and 1929.[19]

The hypothetical relationship with which the data most closely conform can be tested statistically. Three alternative hypotheses may be stated:

1. That there are separate functions for the relation of saving to income in years of rising and falling income, with different slopes for each relation.

2. That there is a constant difference between saving in years of rising and falling income, but that the slopes of the curves are the same for both relations.

3. That the difference between saving in years of rising and falling incomes is a function of the amount of change in income from the preceding year to that year.

The consistency of the data with these three hypotheses was tested, both with and without an allowance for a trend in the propensity to save. In both cases the analysis based on the third hypothesis was found to be the best.[20] The relation between national income and saving, however, came out much the same regardless of which of the three hypotheses was employed in determining it.[21]

[19] See J. M. Keynes, *op. cit.*, p. 319; also O. L. Altman, *op. cit.*, p. 9.

[20] The results of the analyses according to the three hypotheses were as follows:

Per cent of variance in annual saving explainable in terms of the factors considered (adjusted coefficient of multiple determination, $\bar{R}^2_{1.23}$)

Hypothesis tested	Without trend allowance	With trend allowance
	(%)	(%)
Hypothesis 1	84.1	85.6
Hypothesis 2	84.9	86.3
Hypothesis 3	89.2	95.1

Tests of statistical significance show that a superiority of hypothesis 3 over hypothesis 2 as great as shown here would be unlikely to be secured unless there were a real difference in the underlying relationship. Only in one test out of six, on the average, would as great a difference as this be found, if the data were true random samples drawn from the same universe. (For the significance of such sampling criteria with time series analyses, see the author's *Methods of Correlation Analysis* [New York, Wiley, rev. ed., 1941], chap. 19.)

[21] The relevant net regressions were as follows, for the average difference in saving for a one-billion difference in gross national income:

All of the analyses agreed in showing that there was a significant change in the propensity to save during the period, declining to a low during the early thirties, and then turning up again. The analysis selected as the best (the third assumption plus a trend factor) showed a slight but distinct curvilinearity in the relation of saving to income. With higher and higher incomes the additional amount of saving per billion of additional income showed a slight but distinct increase.

These final results are shown in Figure 6, together with the data from which they were computed. The three factors shown explain 96 per cent of the annual changes in saving during the period, and estimate saving for each year with an adjusted standard error of estimate of only 974 millions of dollars.[22]

Figure 6 shows that with each additional billion dollars of gross national income, saving is increased by 265 million dollars on the average, but is ordinarily increased (or decreased) further by 230 million dollars for each billion dollars that income rises above (or falls below) the income of the preceding year. In the first year after gross national income increased by one billion dollars, then saving would usually increase by 495 million dollars while consumption expenditures would increase by only 505 millions. If income remained the same next year, in the second year after that billion-dollar increase consumption expenditures would rise by a further 230 millions and saving would decline an equal amount. The relation of income to saving thus has a dynamic as well as a static component.[23]

Hypothesis 1. 257 millions (when income is rising)
287 millions (when income is falling)
Hypothesis 2. 297 millions
Hypothesis 3. 281 millions

In each case these are the net changes found to be associated, while holding constant the other factors (but not including trend). When trend was also allowed for, the net relation (for the third hypothesis) was found to be a difference of 265 millions in saving for each billion in gross national income.

[22] The exact values were: $\bar{P}^2_{1.2345} = 0.959$; $\bar{S}_{1.2345} = 974$ millions. The linear regression equation determined was

$$X_1 = .265\,X_2 + .230\,X_{2(1-0)} - .797t + .032t^2 - 3.112.$$

An analysis using as the dependent variable saving a percentage of income and substituting the annual percentage increase or decrease in income gave slightly better results than the one shown here. The difference, however, was not significant. Consequently, the simpler analysis is shown here. An analysis using data corrected for price and population changes gave a coefficient of multiple determination ($\bar{R}^2_{1.2345} = 0.948$) lower than the analysis pictured in Figure 6 and discussed in the text.

The curvilinear net regression of saving upon income, as shown in the upper section of Figure 6, is consistent with the corresponding net regression as determined from the analysis based upon the percentage of income saved. In so far as the data charted in Figure 6 are concerned, however, the increase in correlation obtained by using the curve instead of a straight line has no statistical significance.

[23] W. S. Salant in *The Magnitude of the Recovery Problem* (mimeo. pub., Dept. of Commerce, 1940), allowed for this dynamic element by introducing the annual change in

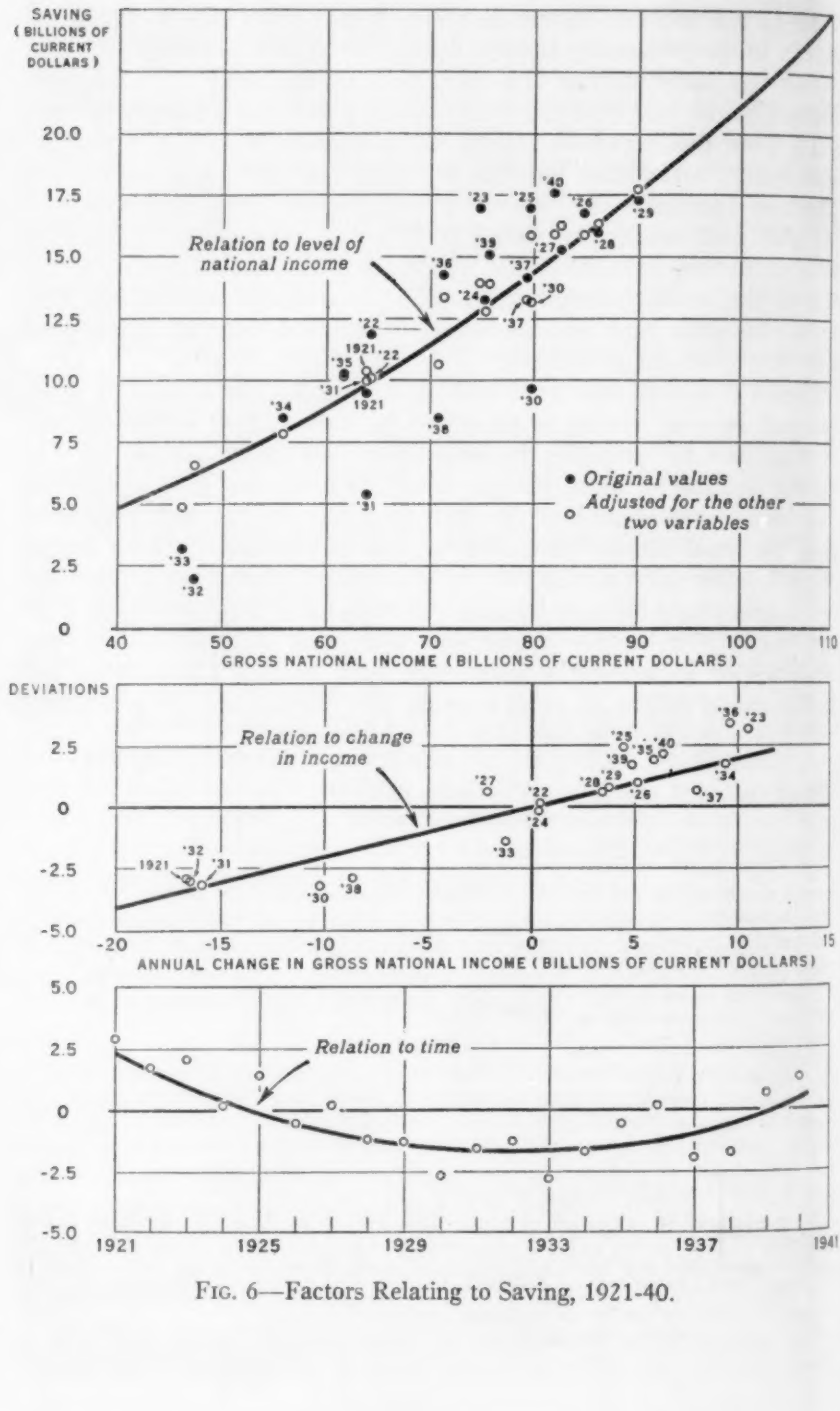

FIG. 6—Factors Relating to Saving, 1921-40.

With respect to this dynamic factor in saving (and to similar dynamic factors in investment, which will be developed in the second paper of this series), Keynes comments:

> I have endeavored to deal with a good many of the sort of problems you have under consideration by regarding the multiplier during a dynamic period as being lower at first when there is an unforeseen increase in permanent investment with a subsequent return to its normal figure. This may be important in time of war, when the first phase may be prolonged almost indefinitely through the inability of supplies of consumers' goods to respond to increased demand.
>
> For when there is an unforeseen increase in permanent or *quasi* investment, it is for a time, and perhaps for a long time, physically impossible for the increased purchasing power of the public to result in increased consumption, however much they may desire this. For there will be no increase of consumers' goods available except to the extent that stocks can be drawn upon. So that the purchasing power has either to spill itself in higher prices or be accompanied by a change in the propensity to consume which diverts more of it for the time being into saving.[24]

The relation of changes in the income level to saving—the dynamic factor—also raised an interesting question as to the significance of the consumption-saving patterns shown by the Brookings and the National Resources Committee estimates. The latter, in particular, are based upon 1935-36 data. In those years (note Figure 6) the *increase* in income was large, and about 2 billions of the saving was explained by that increase. Presumably this was distributed through the consumption and saving of the various income classes. When the 1935-36 distribution is used to estimate probable saving and consumption at still higher incomes, this dynamic factor may be intensified. The Kneeland estimates may therefore not serve as a safe guide to the probable level of saving when a given level of income is maintained statically, but only when that level is being reached on a forward movement. Direct comparison of the Kneeland estimates with the estimates of saving based upon the analysis above do not, however, support this suspicion that the Kneeland estimate is biased upward for static conditions.

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income as a factor in a statistical analysis of gross capital formation and gross national product. So far as is known, this is the only case prior to the present study where the dynamic factor was explicitly allowed for in this way. As suggested by Salant in a letter to the author, the weighting technique used by Currie (see Hearings, *op. cit.*, p. 3536) and Kalecki (*op. cit.*, p. 73) was a rougher way of taking into account the dynamic element. The two methods are identical mathematically in the sense that one form can be transformed into the other. G. Colm and F. Lehmann, in their article "Public Spending and Recovery," *Social Research*, May, 1936, pp. 129-66, also assume a changing propensity to save in their statistical analysis. In their attempt to measure the primary and secondary effects of public spending leakages have been assumed as decreasing from 50% to 33⅓% (see p. 143).

[24] See also, Keynes, *op. cit.*, p. 125, and D. H. Robertson, "Notes on Mr. Keynes' General Theory of Employment," *Quart. Jour. of Econ.*, 1937, p. 168.

The curvilinear relation between national income and saving (with changes in the level of income held constant) deserves special comment. As plotted in the upper portion of Figure 6, this shows a relation as follows:

Level of Gross National Income (in billions)	Corresponding Level of Saving with National Income Unchanging from Year to Year[a]	
	Amount (in billions)	Per cent of total
45	5.75	12.8
55	7.75	14.1
65	10.20	15.7
75	12.80	17.2
85	16.0C	18.8

[a] Holding trend constant at the 1939 level.

Apparently the normal addition to saving for each billion added to the static level of gross national income shifts from about 200 millions between a 45- and a 55-billion level to about 320 millions between a 75- and an 85-billion level. These normal saving levels are also of interest for the relative amount.

The trend shown in the lower section of Figure 6 indicates that the propensity to save declined steadily during the 1920's and turned up slightly in the late thirties.[25] With the same national income, saving in the early thirties would apparently have been about $1\frac{1}{5}$ billion dollars less per annum than in the early 1920's. These changes in the propensity to save may have been associated with speculative income and capital gains, with changes in population rates, with changes in tax policy, or with changes in the concentration of income.[26] The level of the housing cycle may also have been associated with these changes in the propensity to save.

The Functional Relation of Consumption and National Income

Data on consumption are available which are largely independent of the data on saving used in the preceding analysis. This fact makes it possible to make an independent check on the conclusions reached thus far by analyzing the consumption-income relationship.

Theoretically, one would expect to find that the relation of consumption to income was complementary to the relation of saving to income. The relation of consumption to gross national income should be

[25] The trend shown is a second degree parabola, fitted mathematically while holding constant the net linear effects of the other two variables. After the curvilinear adjustment for the first variable was added, tests by the graphic method showed no measurable shift in the type or position of this trend.

[26] Statistical tests of the significance of the factors mentioned showed no measurable relation with changes in saving.

at each stage just the reverse or the reciprocal of the relation of saving to income.

It would be possible to base the analysis of the consumption-income relationship on a figure for consumption derived from the figures used earlier on gross national income and on gross saving. If that were done, there would be no independence in the two analyses and the new analysis would agree perfectly with the previous conclusions. Fortunately, however, Kuznets' estimates of the composition of national income have provided largely independent data on consumption and the analysis may therefore be based on these independent consumption data.[27] Kuznets' estimates of national income are not comparable with the estimates of gross national income used in the study of the offsets to saving data. Consequently, the results of this consumption-income

TABLE III—TWO ESTIMATES OF CONSUMERS' OUTLAY, AND GROSS AND NET NATIONAL INCOME, BY YEARS, 1920–40

Year	Consumers' Outlay[a]	Consumers' Outlay[b]	Gross National Income[c]	Net National Income[b]
	(billions)	(billions)	(billions)	(billions)
1920		62.1		73.5
1921	54.3	55.8	63.8	59.1
1922	52.4	56.1	64.3	60.6
1923	57.8	62.8	74.8	71.4
1924	61.9	66.0	75.2	71.9
1925	62.7	66.6	79.7	75.9
1926	68.0	72.2	84.8	81.4
1927	67.4	71.8	82.7	79.9
1928	70.2	74.2	86.2	81.6
1929	72.7	77.1	90.0	87.1
1930	70.1	73.1	79.8	77.3
1931	58.5	60.2	63.9	60.3
1932	45.4	47.2	47.4	43.0
1933	39.8	45.9	46.2	42.3
1934	47.3	52.2	55.8	49.6
1935	51.4	53.7	61.7	54.4
1936	57.1	57.6	71.4	62.9
1937	65.2	64.1	79.4	70.5
1938	62.3	62.5	70.8	65.4
1939	60.5	—	75.7	—
1940	64.4	—	82.0	—

[a] Derived by subtracting from estimates for gross national income estimates of offsets to saving.

[b] Revised estimates by S. Kuznets, *National Income, 1919–1938*, Nat. Bur. Econ. Res., Occasional Paper No. 2, Apr., 1941, pp. 6–7.

[c] See O. L. Altman, *op. cit.*, Table 2, p. 14.

[27] S. Kuznets, *National Income, 1919-1938*, Occasional Paper No. 2, Nat. Bur. of Econ. Res., Apr., 1941. An adjustment for 1938 and an estimate for 1939, based upon Department of Commerce figures, were made in the analysis.

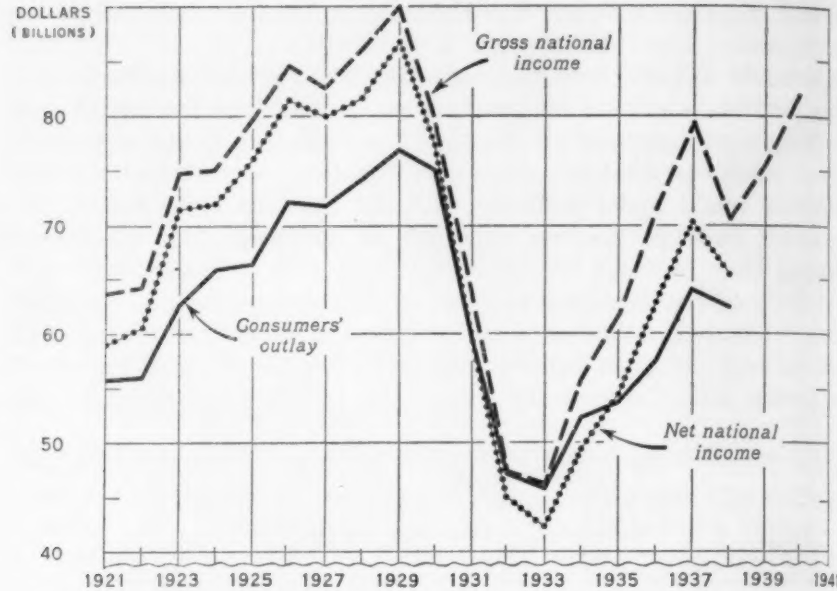

FIG. 7—Consumers' Outlay, and Net and Gross National Income, 1921-40.

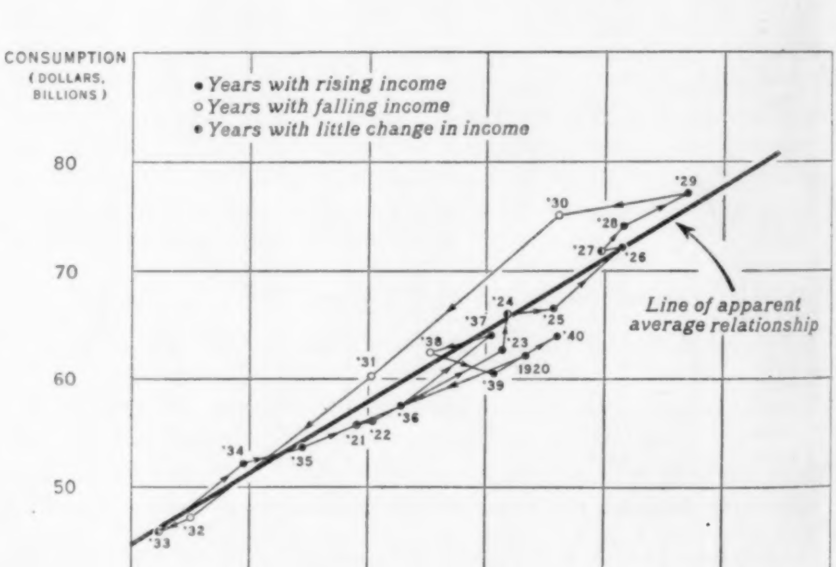

FIG. 8—Correlation of Consumption and Net National Income, 1920-40.

study cannot, strictly speaking, be compared with the results of the previous saving-income study, but they do provide a check upon the conclusions reached as a result of the previous analysis.[28] The estimates of consumption include not only expenditures for non-durable consumers' goods, but also expenditures for consumers' durable goods with the exception of housing which is considered as belonging in the investment category. Some of the goods thus classed under "consumption" are in fact bought through the use of consumers' credit. Consumption as here defined is therefore the same as that shown in Column III of Figure 1.

The changes of consumption in time, as compared with the changes in gross and net national income, are shown in Figure 7. Consumption at all times absorbs the bulk of national income, so it necessarily has a close correlation with it, as is evident in the figure. The nature of this relation is shown more clearly when consumption and net national income are plotted against one another on a dot chart (Figure 8). The relationship is close and apparently linear. It would be possible to explain consumption in every year from income alone with no error greater than 5 billion dollars, and in most years with errors no larger than 2 billions. The simple relation of income to consumption is thus closer than was the simple relation to saving, shown on Figure 5.[29]

Closer examination of Figure 8, however, reveals some of the same peculiarities seen in Figure 5, or, rather, their reverse. Certain years show relatively high consumption for the current income: 1930, 1931, and 1938. These were years of *falling* income. Other years show relatively low consumption for the current income: 1921, '22, '23, '25, '36, '37, '39, and '40. These were mainly (though not entirely) years of *rising* income. There is also some trend present, apparently, with consumption in the latter years of the twenties relatively high and in the latter years of the thirties relatively low. These differences in the behavior of consumption are consistent with those noticed earlier for saving. Rising income is apparently accompanied by less consumption and more saving than would be expected after a static balance is attained at the higher income; falling income by more consumption and less saving than in the static situation.

The relations shown in Figure 8 may be analyzed by the same methods used in analyzing the income-saving relations of Figure 5. Going at once to the type of relationship which was found to yield the best results for saving, we may apply it to consumption by using the formula:

[28] For a discussion of the differences between the two income series the reader is referred to Altman, *op. cit.*, p. 14, footnote 3.

[29] This checking of the saving function by study of the consumption function was suggested to the author by Alvin Hansen. Compare the results shown here with those in Hansen, *op. cit.*, chap. 11, appendix by P. A. Samuelson.

$X_1 = a + b_2X_2 + b_3X_{2_{(1-0)}} + b_4t + b_5t^2$
where X_1 = consumption, in billions of current dollars
X_2 = Net national income in billions of current dollars.
$X_{2_{(1-0)}}$ = Change in net national income from preceding year in billions of dollars.
t = time in years.

The inclusion of t and t^2 in the formula makes it possible to include allowance for a trend in the propensity to consume, with a parabolic curve.

Fitting this equation by multiple correlation gives the values for the parameters as follows:

$$X_1 = 10.256 + 0.712X_2 - 0.090X_{2_{(1-0)}} + 0.917t - 0.37t^2$$

The closeness of fit of consumption as estimated from this equation to the actual consumption is even better than were the corresponding estimates for saving.[30]

The relations as fitted in the equation just given are compared with the original observations in Figure 9. The solid dots in the upper portion of the chart show the original values; the hollow dots in each section show the values after adjustment for the relationship to the other variables. Inspection of this figure shows no perceptible curvilinearity in the relation of consumption to either the level of income or to change in income. If consumption rose by a decreasing amount as the level of income rises, that would be shown by a curve for the upper line, convex from above. The hollow dots give no significant indication of such a curve.

The lower portion of Figure 9 shows the nature of the net trend. Apparently the propensity to consume increased gradually during the twenties, reached a high early in the thirties, and then declined thereafter. The adjusted data for the individual years indicate that this parabolic trend fits the observations quite satisfactorily.[31]

When Figure 9 is compared with the corresponding figure for saving, Figure 6, the similarity is striking. Both saving and consumption rise with the level of income. The difference between income and consumption at any given level of income is quite close to the indicated saving at the same level. Thus, at 60 billions net national income or about

[30] After allowing for the degrees of freedom removed, the adjusted values were $\bar{R}^2_{1.234} = 0.986$, $\bar{S}_{1.234} = 1.044$. This relation to income and trend thus explains over 98% of the observed variance in consumption. An analysis using data corrected for price and population changes gave a coefficient of multiple determination much lower ($\bar{R}^2_{1.2345} = .952$) than the analysis pictured in Figure 9.

[31] Tests of the significance of the addition of the trend indicate that it raises the total correlation by an amount that would occur by chance only in one sample out of eight if the samples were drawn from a universe where trend had no real significance.

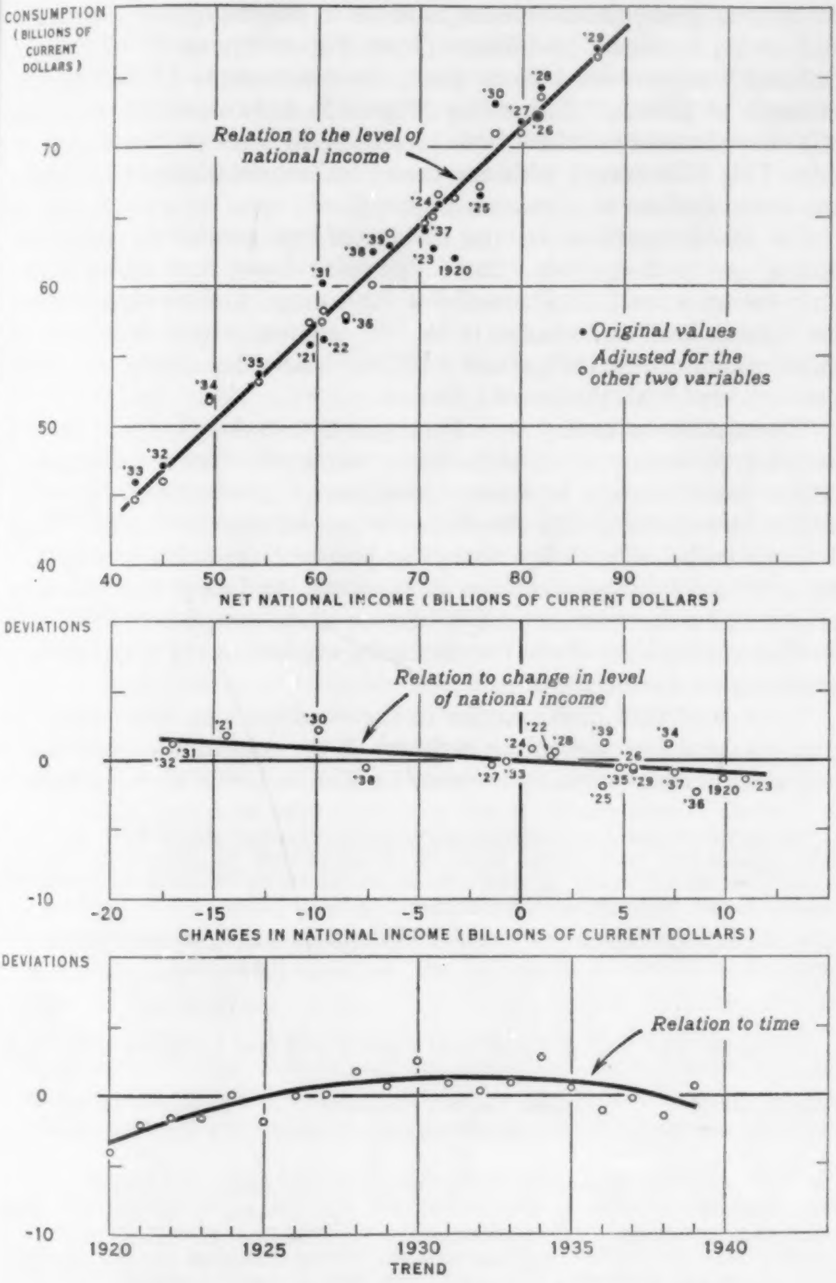

FIG. 9—Factors Related to Consumption, 1920-39.

65 billions gross, the difference is about 8 billions (from Figure 9), and saving is almost 10 billions (from Figure 6); at 75 billions net national income or 80 billions gross, the difference is 12 billions, and saving is 14 billions.[32] But saving (Figure 5) and consumption (Figure 10) show reverse relations both to *change* in level of income and to time. This is in accord with our theoretical expectations and with the apparent relations as shown on Figure 8.

The trend functions are the reverse of one another in shape and timing and in magnitude. Thus, Figure 6 shows that saving in the early twenties ran 2.5 billions above the average amount expected with the current level and change in income, whereas Figure 9 shows that consumption ran in 1921 about 2 billions below the average consumption expected with the current income.

The relations of saving and of consumption to the *change* in income, however, do not come out of the same magnitude. Figure 6 shows each billion dollar *change* in income level to be accompanied by a 230 million increase in saving above that otherwise expected; while Figure 9 shows each billion dollar *change* in income level to be accompanied by only a 90-million decrease in consumption below that otherwise expected. Furthermore, the static relation of consumption to the income level shows no sign of the curvilinearity evident in the static relation of saving to the income level.

These statistical discrepancies in the relations may be explained in part by the differences in the make-up of the consumption and saving and income series, already referred to. The inclusion in the consump-

[32] Figure 9 is computed with net national income as the independent variable, and Figure 6 is computed with gross national income as the independent. To compare the two, it is necessary to use the amount of gross national income usually equivalent to a given net national income. Using the average relationship, this is as follows:

Net National Income (in billions)	Corresponding Gross National Income (in billions)
60	65
75	80

Entering the upper grids of Figure 6 and Figure 9 with these values, the results are as follows:

From Figure 6:

Gross National Income (in billions)	Amount of Saving (in billions)
65	10
80	14

From Figure 9:

Net National Income (A) (in billions)	Corresponding Gross National Income (B) (in billions)	Amount of Consumption (C) (in billions)	B–C (in billions)
60	65	57	8
75	80	68	12

tion series of certain items of durable goods tends to dampen down the response of consumption to *change* in income.

In periods of rapid change in the level of consumers' income, two forces seem to be at work. These two affect the propensity to consume in opposite directions. On the one hand, habits of consumption in individual families seem to be more persistent than habits of saving, so that sudden or large changes in income do not at first affect expenditures for current consumption proportionately, and do affect savings more than proportionately. After a time, if the new level of income is maintained, consumption habits are readjusted upwards or downwards to the higher or lower levels, and savings then are adjusted to conform to the new levels of consumption expenditure.[33] Expenditures for consumers' durables, on the contrary, behave in a different manner. Periods of rising income encourage consumers to expand their purchases of durable goods. This may occur both through the expenditure of idle funds or previous savings, or through purchase on installment credit. In periods of falling income, expenditures for consumers' durables can fall very sharply, while purchases on credit decline below the level of payments due on past purchases, resulting in negative expenditures for durable consumers' goods on credit. The statistical data on this last point are very clear, changes in consumers' credit (which is largely on durable goods) being explainable 95 per cent by *changes* in income, and only 5 per cent by the *level* of income. (Note Figure 10.)

The dynamic relation of an increase in income to consumers' expenditures is thus twofold: expenditures for current consumption rise by less than would be expected from the static relation of income to consumption, while expenditures for consumers' durables other than housing rise by more than would be expected from the static relation. Of the two elements, the changes in current consumption expenditures apparently dominate, as when all consumers' expenditures, durable and non-durable, are lumped together, the net result is a *smaller* dynamic change in consumption (Figure 10), and a *larger* dynamic change in saving (Figure 6), than would be expected from the static relations with income. To the extent that our statistical classification has included in consumption some of those components of consumer expenditures which are financed by installment credit, and are of semi-

[33] In an earlier study, Dirks pointed out very clearly the probable differences in the dynamic and static effects (as they have been termed here) of income changes, and called attention to the "inertia or stability of living standards in the wage-earning classes," and supported it by the analysis of German data. The statistical method which he employed, comparisons of rate of change in both series, lagged and concurrent, did not, however, enable him to measure separately the dynamic and the static elements in the relationship. See Frederick C. Dirks, "Retail Sales and Labor Income," *Rev. of Econ. Stat.*, vol. xx, no. 3, Aug., 1938, pp. 128-34.

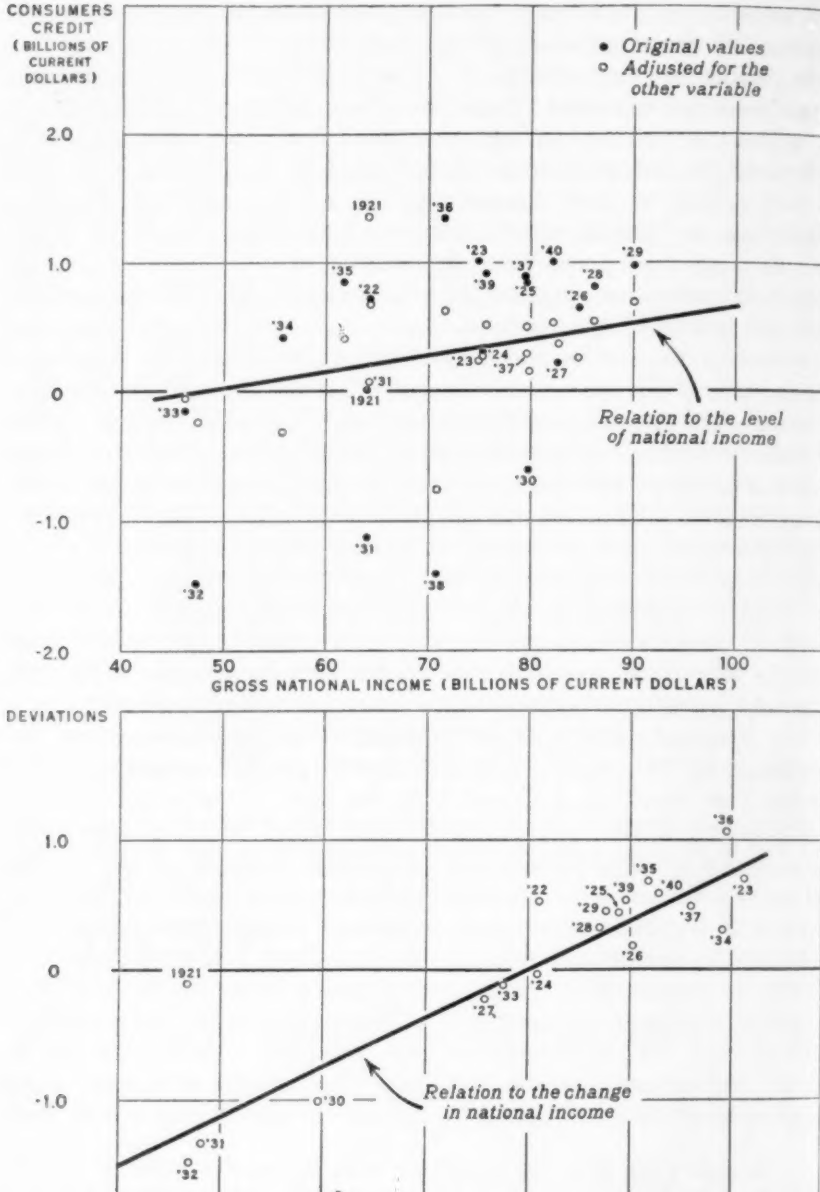

FIG. 10—Factors Related to Consumers' Credit, 1921-40.

durable or durable nature, it has thus concealed part of the response for the current consumption items to the *change* in income.[34]

The way in which the data are conventionally organized thus tends to obscure some of the elements of actual economic behavior. All expenditures for one consumers' durable goods—housing—are usually classified with commercial investment, whereas expenditures for other consumers' durables are classified, in whole or in part, with expenditures for consumption.[35] Yet in many respects expenditures for consumers' durables behave quite differently from expenditures for other consumption goods, and in the dynamic sense they react in an opposite direction. These facts suggest that a breakdown of gross national product might be developed which would base the classification more on similarity of behavior, and less on the commercial or non-commercial character of the expenditures, than do the existing breakdowns.

Relation to institutional changes

The analyses to this point have shown something of the nature of the functional relations between income and saving and consumption. The saving function and consumption function thus defined represent saving and consumption habits under the conditions prevailing during the period covered by the base data—the two decades of the period 1921-40. As a whole this period was one of relatively low taxes on income,[36] of continuing expansion in saving through institutions such as life insurance concerns, of large amounts of saving by business institutions, and of large capital expenditures by governmental bodies.[37] The period as a whole was also marked by high levels of production in two items of consumers' capital, housing and automobiles. Purchases on

[34] This conclusion was verified by a further statistical analysis of consumption. In this analysis, the data on consumption were corrected by subtracting from them the changes in consumer credit, thus giving a measure of consumption expenditures from current income alone. The three independent factors explained 98.4 per cent of the variance in this new consumption figure. The relations to total income and time were similar but the relation to change in income was much more marked. Thus analyzed, the dynamic relation of income to consumption comes out very close to the reverse of the dynamic relation of income to saving, as would be logically expected. Figure 6 shows that for each one billion dollars that income one year rises above the income of the preceding year, saving increases 230 millions above the saving expected at the new income level. Consumption (excluding purchases based on consumer credit) declines 167 millions *below* the consumption expected at the new income level.

[35] The distinction between durable and non-durable consumers' goods is based on duration of life in ultimate use. For discussion see S. Kuznets', *Commodity Flow and Capital Formation*, vol. I (New York, Nat. Bur. of Econ. Res., 1938), pp. 5-7.

[36] Thus the average effective rate on a net income of $25,000 ran between 5 and 10 per cent during most of this period and never exceeded 15 per cent. Approximately 60 per cent of all saving by individuals is done by those with incomes of $20,000 and less. Mordecai Ezekiel, "An Annual Estimate of Savings by Individuals," *Rev. of Econ. Stat.*, vol. xix, no. 4, Nov., 1937, p. 183; National Resources Committee, *op. cit.*, p. 48.

[37] Hansen, *op. cit.*, pp. 238-47.

installment payments may themselves influence saving and consumption habits. The distribution of income among individuals remained highly unequal through the period as a whole, with 25 per cent or more of all income disbursed going to the top 5 per cent of income-receivers, and with the bottom 25 per cent of income shared by 55 per cent or more of income-receivers.[38] Throughout the period one-eighth to one-fifth of all individual income payments went to the top one per cent of income recipients.[39]

Presumably the trends shown on Figures 6 and 9 may reflect changes in some of these institutional factors during the period. As indicated earlier, however, no definite quantitative relationships of institutional changes to these trends have been discovered. On the contrary, the downward movement in income tax rates during the twenties and the increases in the thirties, would be expected to produce shifts in saving and consumption habits just the reverse of those which were actually observed.

A study of the degree of concentration of income in the higher brackets shows that changes in this factor are closely associated with changes in national income. To the extent that this is true the effect of this factor upon saving and consumption is already measured in the relations to the level of income and the changes in that level. No significant net relation was found when this factor was added to the analysis.

It is important to emphasize that the quantitative relations shown apply only under the particular institutional and historical conditions for which they were measured. Before these relations could be used to reach judgments for earlier or later periods, they would have to be adjusted to allow for concurrent changes in all the numerous factors that may influence distribution of national income and saving and consumption habits. However, barring sudden institutional changes of great magnitude, such as the overthrow of our private enterprise system, and assuming the continuity of the trend, the relations determined here seem to describe adequately the behavior of saving and consumption and could be extrapolated for short distances without an undue amount of error.

Summary

This paper analyzes the relation of saving to income and of consumption to income under the conditions which prevailed in the United States from 1921 to 1940, while eliminating (holding constant) the

[38] National Resources Committee, *Consumer Incomes in the United States* (Washington, Government Printing Office, 1938), p. 6; and Leven, Moulton, Warburton, *op. cit.*, pp. 228-29.

[39] A. Goldenthal, "Concentration and Composition of Individual Incomes, 1918-1937," *T.N.E.C. monog. no. 4* (Washington, Sup. Doc., 1940), p. 16.

influence of other factors, found to be related to saving and consumption. Income and changes in income were found to be the major factors related to movements in saving and in consumption. The analysis of the relation of gross saving to gross income confirms the analysis of the relation of consumption to net income. Both analyses show that as national income increases from low levels to high, at the higher levels proportionately more is saved and less is consumed than at the lower levels. Both show that there have been changes in this relation during the past two decades, with consumption at a given income reaching its maximum and saving at a given income its minimum, in the early years of the thirties. Both show that there is a dynamic factor in the relationship with large *changes* in the level of income being accompanied at first by larger changes in saving and smaller changes in consumption than prevail subsequently after a new static balance has been established.

Both the saving-income relation and the consumption-income relation were continuous at approximately the same level through the decade of the twenties and that of the thirties. The trend element showed no sharp break between these periods, and the functional relation remained the same.

The relations found between saving and income and consumption and income, static and dynamic combined, plus the long-time trend in each, left only 4 per cent of the variance in saving and 2 per cent of the variance in consumption unexplained.

The dynamic factor, as discovered here on empirical analysis of the behavior of the relations, agrees surprisingly well with the dynamic factor introduced on theoretical grounds by Smithies as part of his "process analysis" in a paper of which I did not learn until after these studies were completed.[40] Substitution of these realistic parameters into his theoretical equations might extend still further the value of his exceedingly promising analysis.

Except for the introduction of the dynamic factor, these conclusions are in general accord with the hypotheses stated at the beginning of this paper.

Dynamic factors aside, they show that consumption increases as national income increases, but relatively slower, while saving increases as income increases, but relatively faster than income.

(*Part II will be published in the June number*)

[40] A. Smithies, "Process Analysis and Equilibrium Analysis," *Econometrica*, vol. 10, no. 1, Jan., 1942, pp. 26-38.

"PERMANENT" TECHNOLOGICAL UNEMPLOYMENT

"Demand for Commodities Is Not Demand for Labor"

By HANS P. NEISSER

I. Introduction

The theory of technological unemployment is a stepchild of economic science. The facts seem to stand in such blatant contradiction to orthodox doctrine, according to which no "permanent" technological unemployment is possible, that most American textbooks prefer not to mention the problem itself. This attitude is of recent times. The analysis to which Ricardo subjected the displacement of labor by the machine in the last edition of the *Principles* had stimulated a lively discussion among the later classical economists, who, as we shall see instantaneously, followed two different lines of thought. With the rise of neoclassical equilibrium analysis, the discussion died down, at least in Anglo-Saxon literature[1] and only recently the oldest argument against technological unemployment, originally developed by McCulloch, was revised in a little more sophisticated form by two American economists, P. H. Douglas and A. Director in *The Problem of Unemployment* (New York, 1931). We can, therefore, distinguish three approaches:[2]

1. The "Law of Markets" approach, formulated at first by McCulloch in *Principles of Political Economy* (first edition, 1825) Part I, chapter VII, and, as pointed out above, revised by Douglas and Director, applies Say's Law of Markets to the Labor Market. As there cannot be a general over-production of commodities produced, so there cannot be a general over-supply of labor. We shall analyze this argument in the first section of this paper, with some supplementary remarks in Section V.

2. McCulloch's argument was not taken up by the other classical authors, because it is at variance with the classical theory of the demand for labor. As John Stuart Mill stated it most pointedly: "Demand for commodities is not demand for labor" (*Principles,* vol. I, p. 5, para. 9). The maintenance of the demand for commodities according to Say's

[1] Pigou's and Hicks's discussion of labor saving and capital saving inventions was not developed with a view to the unemployment problem. See below, Section V.

[2] The history of the doctrine in question has been written, in a scholarly fashion, by Alexander Gourvitch, *Survey of Economic Theory on Technological Change and Employment* (Work Projects Administration, National Research Project, Report No. G-6, Philadelphia, 1940). The present approach differs in many respects from Mr. Gourvitch's one.

Law, therefore, does not militate against an over-supply of labor. It is the volume of circulating capital, interpreted as wage fund, that governs the demand for labor. Following Ricardo's lead, the theory of "compensation" of technological displacement of laborers was worked out. In contrast to the Law of Markets approach, which does not allow any exceptions to the denial of "permanent" technological unemployment, the Wage Fund School maintains the occurrence of compensation only as the general rule, exceptions from which are deemed possible though unlikely. In Section III,[3] we shall consider this argument.

3. The neo-classical equilibrium approach differs from the preceding ones by denying the possibility of technological unemployment only as to a state of long-run general equilibrium proper, in which complete adjustment of all the variables of the economic system is attained (size of firm, input, output, prices of goods produced, prices of productive services, interest rate). The difference of the neo-classical approach from the Law of Markets approach is concealed by the use of the terms "temporary" and "permanent" by the latter school. By "permanent," Douglas and Director do not refer to the state of long-run equilibrium proper. This is clear from their definition of "temporary" technological unemployment (*op. cit.*, pp. 113 *ff.*), which refers only to such obstacles to the reabsorption of laborers as: slow working of competitive mechanism, slow transfer of expenditure from one good to the other, or of workers from one industry to the other. A state of affairs in which these obstacles are overcome (as we shall assume throughout the present paper) still might be in a merely "short-run equilibrium" in the neo-classical sense, which is based on the assumption that all equipment is "given" as to quality and quantity, while long-run equilibrium proper in the neo-classical sense requires, among other things, the adjustment of the size of the firm and of the quality of equipment in such a way that average costs equal price for all firms. Indeed, if the Law of Markets is valid at all, it must be applicable to periods of any length, provided only the period is long enough to overcome the temporary obstacles; and similiar considerations apply, as we shall see, to the wage-fund argument.

There is a further important difference between the scope of the neo-classical argument and the two preceding ones. Their concepts of unemployment differ. The older theories use something like the popular concept: a man is called unemployed if he cannot find employment at the prevailing wage rate. If "permanent" technological unemployment in this sense is impossible, then, indeed, technological progress would confer only benefits to the working class, as maintained by the two classical schools. On the other hand, the neo-classical approach only

[3] Section II deals with the concept of a labor-saving device.

maintains that, in the long run, a man can always find employment at the *long-run equilibrium wage rate,* which may differ considerable from the prevailing rate. A man who refuses to work at this equilibrium rate might be called unemployed by the classical school, but would not be called unemployed by the neo-classical economists; it is in this sense only that neo-classicism denies the possibility of "permanent" unemployment.

While there is little merit in the two classical approaches, the neo-classical one stands on much firmer ground, on account of its lesser scope. However, even the neo-classical approach is far from giving the unambiguous answer its adherents ascribe to it. This will be shown in Section IV. On the other hand, while the unqualified denial of "permanent" technological unemployment in traditional theory is not justified, preliminary empirical investigations (which cannot be presented in the present paper) have convinced the present writer that popular opinion vastly exaggerates the amount of unemployment which properly could be called "technological." The relative small size of technological unemployment in history is attributable, partly, to the independent forces increasing employment, which briefly will be discussed in the last section. In no case would it be permissible to use simply the current unemployment statistics as a verification or a repudiation of the theories which affirm or deny the existence of technological progress that creates unemployment. Hitherto the discussion has been marred by a confusion of historical and theoretical statements. We read, *e.g.:* "As a matter of fact, however, the increased output, consequent upon the introduction of machinery, gave rise to an increased demand for products; and the increased products, due to the cheaper machine process, stimulated the accumulation of capital and resulted in the building and operation of numerous new plants which reabsorbed the labor supply. Thus machinery in the end has not displaced labor but instead has increased the marginal product of labor and thus increased real wages."[4] We may interpret this as a historical statement concerning the period since the Industrial Revolution till the crisis of 1929; during this period, factors making for more employment are supposed to have outweighed the factors of displacement; and this historical statement is, of course, confirmed by the inspection of census figures. On the other hand, these statistics are quite inappropriate to the theoretical question whether technological progress *contributes* to unemployment. What would one think of an argument against the law of gravity based on the undeniable truth that only a very small number of people habitually fall against the center of the earth with an acceleration of 33 feet per second? And yet, the reference to unanalyzed observation is not worse than the reference

[4] F. B. Garver and A. H. Hansen, *Principles of Economics* (1937), p. 567.

to unanalyzed historical facts. In order to obtain a reliable answer to our question, it is necessary to keep constant the other factors as far as they are ***truly independent, i.e.,*** not exclusively or almost exclusively governed by the volume of technological unemployment itself.

II. The Law of Markets Approach

The compensation argument of the Law of Markets School runs as follows: Purchasing power is, by itself, indestructible; if technological progress in industry A reduces the amount of labor necessary to produce a given volume of output in this industry, the price of the goods will decline in proportion to the decline in average costs, at least under conditions of full competition; now either the sales volume can be increased correspondingly to the price fall (demand elasticity $= 1$), then the workers displaced will be reabsorbed by the industry A itself, which now produces more; or the sales volume increases by less (demand elasticity < 1), then the consumer will be able to increase his outlay for the products of other industries B, C . . . , which, therefore, would reabsorb the workers displaced in industry A. And in the case of a demand elasticity ***larger*** than unity it would be industry A which attracts additional labor. Thus, the initial displacement of workers in industry A is compensated by an increased demand for labor either in that industry, or elsewhere. In other words, with a given volume of consumers' outlay and with a given output, a definite amount of employment is associated; demand for commodities ***is*** demand for labor.

It is difficult to obtain a clear idea of the price theory which underlies this argument. The starting point of the Douglas-Director analysis obviously is a state of ***long-run equilibrium*** in which not only marginal costs but also average costs equal price; and the analysis ends by looking at ***another*** state of equilibrium, reached after the technological progress has materialized, because the authors assume that at the end of the process competitive prices will ***again*** equal average costs. The question naturally arises: In what way is the reabsorption of displaced workers in industries B, C . . . carried through? (For the sake of simplicity, attention will be focused in the present section on the case of a demand elasticity smaller than unity.) In the "short run," ***i.e.,*** with equipment given as to quantity and quality and with a given wage level,[5] there is no reason to assume that an upward shift of demand in industries B, C, etc., would spend its force exclusively on output. On the contrary, as the basic equation of monetary theory is usually interpreted,

[5] The second condition is not strictly Marshallian and could be dropped in other applications of the short-run concept. As pointed out by F. H. Knight (***Risk, Uncertainty and Profit,*** pp. 142-44, footnote), Marshall neglected to correlate clearly the theories of commodity prices and factor remunerations for the different phases because he was concerned chiefly with partial equilibrium analysis.

an increase in the flow of purchasing power may raise ***prices*** rather than *output*. And although this statement refers to the *total* flow in the economic system and to the price level, it may be true also for an individual industry; for the entrepreneur cannot possibly ascertain the source of rising demand; whether it is generated, on the one hand, by gold production, credit expansion, dishoarding, etc., *i.e.*, factors that govern the flow of purchasing power in general, or, on the other hand, by a re-distribution of the *existing* flow. We admit, however, that this application of the "equation of exchange" is not permissible in the problem before us; because even in the short run the physical volume of output is not a given magnitude (as assumed by the older forms of the quantity theory) but is indicated by positively sloped supply curves. Only in the limiting case ("full" utilization of resources) will demand intersect the supply curve in the *vertically* sloped segment of the latter; but there is no case in which the effect of the expanding demand would be wholly concentrated on output, as the theory of compensation implies. Even under imperfect competition, where the competitive supply curve has to be discarded, the cases are rare in which expanding demand will not raise the price.

As long as the equipment in industries B, C, etc., has not undergone fundamental changes as to quality and quantity, they are not able to reabsorb completely the workers displaced in industry A. This adjustment of the given stock of equipment is not discussed at all in this context by the Law of Markets School; and, indeed, the adjustment could not be secured by the operation of the Law of Markets alone. The adjustment can be achieved in various ways: (1) by a change in the size of the firm, other firms changing commensurately in the opposite direction; (2) by a change in the wage level, caused by the technological unemployment; (3) by a change of the "quality" of equipment; (4) by a change in the total quantity of equipment in the economic system. Of these methods, number (1) could not, in principle, raise employment *in toto,* because an increase in the size of one firm, under stationary conditions, involves a reduction in the size of another firm, from which capital is transferred to the first one; nevertheless, the implications of this re-distribution of capital deserve comments; we shall return presently to them. It is mainly the action of mechanisms (2)-(4), not the "indestructibility of purchasing power," through which displaced workers may be reabsorbed. However, as shall be pointed out in later sections, the effectiveness of these mechanisms has theoretical and practical limits which militate against the hard and fast theoretical proposition that no permanent technological unemployment is possible.

The neglect of the mechanisms numbers (2) and (3) by the Law of Markets School can be explained, partly, by their second assumption

that not only consumers' outlay and output, but also output and employment are rigidly associated. In other words, an output of, say, $1,000 in industry A is supposed to be associated with the same amount of employment as an output of $1,000 in any other industry (B, C, etc.), materializing during the same period. The significance of this assumption for the Law of Markets approach is obvious; for let us suppose, for the sake of the argument, that $1,000, transferred from outlay for A to outlay for B would spend their effect exclusively on output and not at all on price in B: still it would not follow that the workers displaced in A would be completely absorbed in B, unless the crucial assumption we are discussing now is correct. However, since labor and capital coöperate in different proportions in different industries, $1,000 output will contain different amounts of wage costs and labor in different industries. The assumption is therefore untenable.

It should be noticed that the assumption discussed in the preceding paragraph does not become tenable if, instead of individual industries, "integrated" industries (including the so-called "higher stages" of production, where raw materials and machinery are produced) or the economy as a whole are considered. It is sometimes asserted that differences in the capital-labor ratio of a lower stage are of no significance for the economic system, because capital expenses will be "ultimately" resolved into labor expenses; thus, if in a lower stage of production the capital expense assumes a relatively large share of total expenses, labor expenses are supposed to take a correspondingly larger share on the "higher" stages. But, first of all, the resolution is not one of *all* capital expenses but only of the replacement allowance (for equipment and material) and it is not a resolution into wages alone but into *all factor remunerations*. The reader may consider the following pattern which symbolizes the circulation in two integrated industries differing as to the share of labor expenses in total expenses. In both cases, total expenses on the lowest stage are $1,000. Under the simplifying assumptions that (a) rent, cost-taxes and profits are zero, (b) that the period of turnover of capital is the same in both cases on all stages, the circulation can be represented, in each case, by three columns representing, from left to right, (1) interest, (2) the other capital expenses (to be distributed on the next stage), and (3) wages; the ratio is, on every stage,[6] in the first case 1 ÷ 1 ÷ 2, in the second case 1 ÷ 1 ÷ 6.

In other words, the net output of an economic system may consist,

[6] Since the highest stages are common to all industries the assumption of a constant share of wages in total expenses on all stages of an "integrated" industry is incompatible with the existence of different ratios for different industries on the lowest stage. This does not invalidate the argument. A more realistic example can be found in my paper "Oeffentliche Kapitalanlagen in ihrer Wirkung auf den Beschaeftigungsgrad" in *Economic Essays in Honour of Gustav Cassel,* London, 1933, p. 464.

e.g., of 66⅔ per cent wages and 33⅓ per cent profit, interest and rent, *or* of 86 per cent wages and 14 per cent profit, interest and rent; in the latter case, obviously, employment would be larger, provided we compare systems with the same output and wage level.

CIRCULATION OF EXPENSES IN INTEGRATED INDUSTRIES

Stage	First Case			Second Case		
First Stage	250	250	500	125	125	750
Second Stage	62.5	62.5	125	15.6	15.6	93.8
Third Stage	15.6	15.6	31.1	1.9	1.9	11.8
....	....	....	....	....	....	....
Sum	333	333	666	143	143	857

For the problem of technological unemployment, however, the correction by which we had to qualify the "resolution" theorem, may seem to be less important. We are still in the short-run phase of the problem, *i.e.*, we ask whether absorption of the released labor is possible with a stock of equipment of given quantity and quality; then only those costs which enter into short-run supply price will matter, *i.e.*, *marginal* costs; in their determination interest plays a very small rôle, the bulk of interest being a fixed charge. There is, however, another aspect of the "resolution" process, which further *invalidates the rigid association* between output and employment, supposed by the Law of Markets School. In an industry B with a relatively small share of labor expenses per $1,000 of output, the total amount of *capital expenses* naturally would be larger than in industry A; and this result holds true also for "integrated" industries. But will the capital expenses be currently expended? We may here disregard the question where, in case of a transfer of consumers' outlay from industry A to B, the money would come from to pay out the larger volume of total expenses, which as the example shows may develop in B as compared with A; for the problem is not purely monetary. Are we entitled to assume that the increased replacement allowances in industry B will be used currently for reinvestment and likewise, in case of an imperfect supply elasticity in B, that the ensuing profit increment in B will be spent and invested in its entirety and not hoarded? Obviously *if* some hoarding took place, then the "higher stages" would not benefit in full from the capital expenses (and profits) in the lowest stage, and the reabsorption of workers would meet a further obstacle.

The following alternatives seem to offer themselves as answer:

1. The chances for an increase in current investment and replacement in B are good if the capacity of the industry as a whole is so well

utilized that aggregate profits are above zero or at least not negative. But then the range over which the supply elasticity in B is still considerably above zero, would be rather small, and the transfer of purchasing power from A to B would spend its force largely on *prices*.

2. A large amount of unused capacity in the bulk of *competitive* industries, *i.e.*, a wide range of *elastic* supply, is indicative of latent *deflationary* tendencies. If, therefore, the displacement occurs in an industry where the share of labor expenses is relatively large, the ensuing price fall, indeed, might bring about a rise in *output* in the lowest stage of B, C, . . . without a considerable price rise; but the absorption of labor in integrated B, C, . . . would *not run parallel* to the increase in *output*.

3. There remains the alternative of widespread "monopoly," under the reign of which unused capacity would *not* be indicative of latent deflationary tendencies. However, a stage of widespread monopoly certainly is not conducive to increasing the stock of equipment by investment.[7]

III. A Tentative Definition of Technological Unemployment

We have already obtained some results,[8] though we have still a long way to go. The Law of Markets does not secure the reabsorption of workers; there is no rigid association between purchasing power and quantity of output nor between output and employment. In the latter conclusion the key to the understanding of technological unemployment is to be found: according to different stages of the arts, a given volume of capital tends to combine with different amounts of labor; the

[7] The Douglas-Director discussion of technological unemployment under "monopoly" conditions is not less objectionable than their discussion of the case of competition. Admitting that consumers of A would transfer less purchasing power from industry A to B, C, etc., under monopoly in A than under competition, they insist that the difference is made up from the increased monopolistic profits in A. This amounts to assuming that monopolistic profits can be spent in the same spending period in which they are taken in; in other words, monopoly is considered to secure an automatic increase in the flow of purchasing power per time unit or, what is the same thing, in the velocity of circulation. A detailed discussion of this unfounded assumption is not necessary because it is not essential to the basic argument of the Law of Markets School; moreover, although the *transition* from competition to monopoly certainly would reduce output and employment, no reason is visible why, under monopoly, the *relative* displacement of workers by technological progress would be larger in per cent of the employed than under competition.

[8] The results of Section I were obtained on the level of a "partial equilibrium" analysis. Most recently, Professor O. Lange has made the attempt, to work out, under the same assumptions (given equipment, given wage level) a short-run *general* equilibrium level in form of a system of equations, which would permit to ascertain the repercussions in industry A originating in the induced changes in another industry. The report on Professor Lange's paper (in "Cowles Commission for Research in Economics; *Report of Sixth Annual Conference*, 1940," pp. 68-71) is too brief to allow any judgment whether, on the basis of his model, results of wider scope than worked out above could be obtained.

labor-saving type of technological progress simply raises the amount of capital per worker. The phrase "tends to combine" points to the fact that the trend of technology may be nullified by forces of *adjustment* (mentioned above, p. 54), the discussion of which will be the topic of the last sections of this paper, but these forces do not entitle us to deny the existence of the technological trend itself.

From this viewpoint, a labor-saving device is a method of production which permits production of the same output with less labor than before, either with the same or an increased amount of capital.[9] This definition provides also an answer to the naïve question whether the displaced laborers would not be reabsorbed in the production of the labor-saving device itself. As matter of principle, no increase in the physical volume of capital is necessarily involved in the technological progress; the improved device may not cost more than the unimproved one, and might be financed from depreciation funds; and even if, in a given case the capital embodied in the new device would exceed that embodied in the old one, reabsorption of all displaced laborers is impossible, since otherwise the unit costs of output would not be smaller than before, and no incentive to introduce the new device would exist.

On the other hand, our definition of labor-saving devices has obvious defects. The criterion "capital divided by labor," both measured in terms of prevailing prices, is defined for a firm of given size, measured in terms of *current output;* output and size of the firm, however, may vary, and for different volumes of output, the ratio in question may be different. (We shall take up this question in Section V.)

IV. The "Wage Fund" as Maintaining Employment

For the short-run analysis offered in the preceding sections, the increase of demand in industries B, C, etc., is the causal factor that brings about a short-run price rise and increase in output. The *market price* would rise at once under a stimulus of increased demand, above the *short-run price,* and it would be the response of entrepreneurs to the higher market price that would bring about the short-run increase in output and would lower the market price to the new short-run level. Consequently, in the analysis of short-run price and output, economic theory needs not bother about the question of where the entrepreneur procures the additional working capital: it is the degree by which working capital is provided that governs marginal output in the short run, and not the quantity of output that governs the volume of working capital needed. Whether the entrepreneur utilizes the temporary extra profits, from the rise in market price, or borrows funds to build up the marginal quantity of working capital, is irrelevant; in any case, the

[9] The corresponding definition of capital-saving devices is obvious.

supply price of the additional funds enters the marginal cost function, the shape of which governs the increase in output for any given upward shift in demand in the industries B, C, etc.

Thus, there would not be any reason to treat specifically the procurement of working capital within the framework of our analysis, if it were not for the central position into which classical economists have placed it in discussing technological unemployment: it is in circulating capital and not in the demand for commodities that, in their opinion, the demand for labor resides. Technological progress therefore could not affect the demand for labor but by impairing the stock of circulating capital. This classical proposition needs some comments.

The circulating capital or working capital is considered by classical economists as a stock of wage goods or "wage fund," supporting laborers during the "period of gestation," *i.e.*, till the goods they are just processing have sufficiently "matured" to be consumed. To this construction, it has been objected that workers do not live on a stock of goods, accumulated in advance for the whole period of gestation but largely on a current flow of goods, emanating continually during the period, provided production is sufficiently synchronized. For our present purposes this point is of minor importance, the more so since the continuous coming forth of the flow is conditioned by the perpetual existence of a stock, not of finished wage goods, but of "goods in process." Ricardo based the possibility of technological unemployment or entrepreneurial inclinations to reduce, in the interest of higher profit, the wage fund by converting "circulating" capital into fixed capital.[10] His successors, for a considerable time, identified the question whether technological progress has proved beneficial or not to labor, with the other whether the wage rate would be adversely affected in the course of progress. To answer in the negative, they were satisfied with proving that, at least in the vast majority of cases, the wage fund would not be reduced by technological progress.[11] The theory of employment itself was only indirectly touched upon. It cannot be doubted, however, that, in classical opinion, the mere fact that the "wage fund" was maintained, sufficed to secure also re-employment of the displaced workers.[12]

The wage-fund theory of employment can serve as an illustration of Marshall's dictum that many an older economist "did not seem to have a sufficient responsibility . . . for keeping the number of his equations

[10] David Ricardo, *Principles of Political Economy and Taxation*, chap. 31.

[11] See the most elaborate analysis of N. W. Senior, *An Outline of the Science of Political Economy* (Reprint, 1939), pp. 153 *ff*.

[12] The only systematic presentation of the issue from this angle known to the present writer is: H. Mannstaedt, *Die Kapitalistische Anwendung der Maschinerie* (1905). As "theory of compensation," the argument appears in many German textbooks. Cf. *e.g.*, Ad. Weber, *Allgemeine Volkswirtschaftslehre* (1928), p. 169.

equal to the number of his variables, . . ." (Letter to Colson, printed in *Econometrica,* Vol. I, 1933, p. 221). Evidently, in order to determine, on the basis of the wage fund the number of employed, one has to know the wage rate in terms of wage goods. On the other hand, in classical teachings, the wage rate itself is governed by the wage fund; it is obtained by dividing the wage fund by the number of employed: *one* equation, *two* unknowns! With the concept of a given stock of wage goods, it is consistent to conclude *either* that the laborers displaced in A are re-employed and the wage level remains the same, *or* that they are *not* re-employed, thus consuming less, while the real wage level of the still employed rises. The latter alternative, surprising as it seems at the first glance, is by no means improbable; we have only to remember that what is fixed contractually between employer and worker is not the real wage but the money wage rate; if the wage bill declines because of technological unemployment in some industry, the given stock of wage goods can be sold only at lower prices, as it usually happens at the beginning of a depression. If this alternative is accepted, it is tempting to deduce from this starting point a theory of depression; for, certainly, the producers of wage goods (whose costs have not yet declined!) would respond to lower prices with a short-run reduction of output; thus a chain of cumulative shrinkages could be supposed to be generated. However, this line of reasoning would imply the acceptance of a fundamental but faulty premise of the wage-fund approach, namely, that wage goods are rigidly separated from other consumer goods. There is not only a stock of wage goods in *process,* from which the continuous flow of wage goods emanates, but also stocks of "profit goods" in process, "rent goods" in process, etc., from which the flow of real income to the other classes is continually generated. Now even in the short run some transfer from the flow of wage goods to the other flows is possible; if the decline in the wage bill happened to be associated with a rise in profits, the wage fund would decline and the "profit fund" would rise. It follows that the classical equation: Wage Fund = Wage Rate (per period of gestation) times Employment, has *three* unknowns.[13] And such a rise of profits, parallel to the decline in the wage bill in A because of displacement of labor, is by no means restricted to cases of imperfect competition, as Douglas and Director, arguing in terms of average costs, supposed; whether, under perfect competition, profits or losses are created in the short run by the introduction of the new technical methods depends *inter alia* on the way in which the shape of the marginal cost curve is affected by the technological progress.

[13] Senior was not without misgivings in this respect. The ratio of wage goods produced to profit goods produced is, in his theory, governed by the profit rate (*op. cit.,* p. 174); the logical circle is complete.

It is not surprising that the analysis of the wage-fund theory of employment, on the whole, gave negative results. For this approach, as embodied in the equation above, is purely algebraic and does not indicate the causal mechanism, neither the motives of entrepreneurs nor the technical possibilities of re-employment. The classical theory had recognized that production is conditioned by the coöperation of fixed capital, circulating capital and labor, the ratio of capital to labor being governed by what later was called "the nature of industry," *i.e.*, the state of the arts; if so, how could the mere preservation of *circulating* capital ensure re-employment? Ricardo did not bother much about this question, because his "long-run" equilibrium concept was different from the later, neo-classical one,[14] denoting not equilibrium as worked out for a *given* quantity of factors available, but rather the terminating point of a process in which the rise or fall of the supply of labor and the changes in the current rate of capital accumulation adjusted both prices and factor remuneration to their "natural" level, and secured full employment of labor. The most logical conclusion (which was, indeed, drawn by Marx) would be to have current employment governed by the quantity of fixed capital available and the nature of the respective industry; then, technological progress that raises the amount of fixed capital necessary per worker would bring about displacement, to be compensated solely by further accumulation and investment of capital.

Later classical economists like Cairnes and Sidgwick,[15] being aware of these logical consequences of the Ricardian approach, tried to save the optimistic results of McCulloch and Senior in part by pointing out that additional fixed capital could also be provided by converting into fixed capital the working capital set free by the displacement of laborers. The quantitative significance of this process clearly would be small. Some theoretical comments on this suggestion may also be permitted here, because they will definitely clarify the position of working capital in the process of displacement and reabsorption. The setting free of working capital refers to the industry A where the technological progress materializes, not to the industries producing wage goods; because if these would reduce output and working capital, they would create *additional* unemployment, which would require an *additional* process of absorption.

Now, the output in industry A is certainly larger after the introduction of the new methods than before; otherwise, the price would not fall. Consequently, the *physical volume* of working capital in A must be *larger* than before, except in the case that the period of gestation is

[14] See F. H. Knight, ***Risk, Uncertainty and Profit*** (New edition, 1929), p. 143, footnote.

[15] J. E. Cairnes, ***Some Leading Principles of Political Economy Newly Expounded,*** (1894), pp. 190 *ff.*; H. Sidgwick, ***Principles of Political Economy*** (1883), p. 320.

reduced by the technological progress, which would imply a capital-saving device rather than a labor-saving one. Still it would be possible that the *value* of the stock of working capital is smaller than before, despite the larger quantity, because goods are now produced by less labor per unit of output. But even if the value happened to shrink, this would not imply an abundance of working capital which could be converted into fixed capital. Entrepreneurs in A would pay out, during the period of gestation, a smaller amount of funds to factors of production than they had before; in the subsequent period, the effective demand for commodities and the net amount by which the demand for goods in B, C, etc., is augmented, would be correspondingly smaller. In these industries, the entrepreneurs would respond to a lesser degree than assumed in Section I, by expanding output and working capital in the short run: any mobilization of the abundant working capital in A would, therefore, at the best, raise the compensation of the technological unemployment to the level indicated in our former analysis and no additional absorption would ensue.

Clearly, if, in the process of technological progress the flow of purchasing power is maintained, as the Law of Markets School assumes, then the aggregate value of working capital in the economic system would not shrink; its wage component may decline, but, because of rising prices or of a higher ratio of capital to labor (in B, C, etc.), the other components, *viz.*, profits and business payments, would rise.

V. Changes in the Wage Level and in the Quality of Equipment

Removing now, step by step, the strict conditions of the short run, we drop first the condition of an unchanged wage level. Technological unemployment could lower the wage level throughout the system. In the short run, where equipment is given as to quantity and quality, this would cause a downward shift of the marginal cost curve and would increase current output and capital, for any given state of demand. At the same time, a *long-run* process is started, adjusting the *quality* of equipment. Lowering the wage rate tends to bring about a combination of the given quantity of equipment with a *larger amount* of labor, implying the reabsorption of a certain number of displaced workers.

As pointed out in the beginning, this theory of compensation, being the offspring of modern equilibrium theory, has a greater theoretical validity than the two older approaches discussed in the preceding sections. Equally great is the difference between the scope of the compensation argument of the equilibrium school on the one hand and the two older approaches on the other hand. The Law of Markets School and the Wage Fund School tried, above all, to prove that the wage level would *not* be affected; the mechanism of absorption we are going to

discuss now does not support in any respect the older doctrines. Moreover, the practical significance of the equilibrium theory approach is small in the present era of relations between capital and labor, where wage rates have proved very inelastic in face of the pressure of unemployment.

We do not want, however, to dismiss the problem with such purely practical considerations. Too easily would it be argued that unemployment caused by technological process is not genuine, but would vanish in time if a sufficient wage reduction set into motion the mechanisms now under consideration. Theoretical comments on the neo-classical approach are the more in order, since the opinion seems to be commonly held (although never explicitly stated) that wage reductions, in order to be sufficient for reabsorption, need not be considerable, or would at least not reduce the worker's standard of living beyond a fair minimum.

As to the short-run effects of a wage reduction, our comments can be brief: (1) It is still an unsettled question of economic theory whether the assumption of an unchanged state of demand is compatible with the general decline in the wage level; (2) the degree of reabsorption of displaced workers, consequent to the reduction of wages, is, in the short run, theoretically not related, to the magnitude of displacement.[16]

More complicated is the theoretical analysis of the changes in the *quality* of equipment caused by a wage reduction. For it is precisely by these changes that, according to the neo-classical theory, a state of general long-run equilibrium is brought about; and in such a state, no unemployment in the *theoretical sense* could exist. A closer analysis of the mechanisms involved is necessary.

The term "change in the quality of equipment" covers two processes. The first is a consequence of the change in the *price relations* brought about by the decline in wage rates which sharply lowers the prices of all goods in the production of which relatively much labor and little capital is applied; consumers' demand will turn to these goods, and productive resources will be transferred to such "little capitalistic industries" (as they may be called from now), from highly capitalistic industries, increasing the amount of labor combined with an equipment of given *quantity*. The second process refers to the change in the methods of production within the specific industry; it is a process underlying the traditional marginal productivity analysis, where, with a given quantity of "capital," different quantities of labor are combined. Both

[16] Further results may be reached by a short-run *general* equilibrium analysis of a system of simultaneous equations, with equipment but *not* the wage level being given. Such a system has been developed recently by J. R. Hicks in *Value and Capital* (1938). The present writer has not yet been able to make it fruitful for the particular problems of this paper.

mechanisms together are supposed, in modern theory, to bring about general equilibrium in the long run.

The limits of the first mechanism are fairly clear. Obviously it would not work if in all industries the factors of production would be combined in the *same* fixed ratio. As illustration, let us assume that three units of labor are always combined with two units of capital. If, then, an equal amount of labor and capital is available, plainly one-third of labor would be unemployed all the time. On the other hand, if there are "industries," like the "industry" of personal services, in which labor needs not the combination with capital to operate, then it is certain that at a zero wage rate all labor would be employed. If this unrealistic assumption is discarded, however, the picture changes: at a positive wage rate, the equilibrium price for any good produced must be above zero, and then the demand for the product of the little capitalistic industry may not prove sufficiently elastic.

This possibility is somewhat concealed by the mathematical form in which the equilibrium theory is stated. Equilibrium is characterized by a system of equations, in which prices and output of the different goods and the different productive services are the unknowns; since the number of equations can be shown to equal the number of unknowns, there always seems to exist a set of solutions indicating the prices of goods produced and of productive services at which the latter are utilized in full and no longer unemployed in the theoretical sense, ***whatever the volume of their supply***. However, these solutions need not give positive values for prices and output (not even real ones!); and if not, then they are meaningless, and no equilibrium exists on the basis of the data. In the following illustration, we use the original Walras model reproduced, in simplified form, by Cassel in his ***Theory of Social Economy***, Book I, in which the methods of production, stated as "coefficients of production," are taken as fixed, because we wish to isolate the effects of the first mechanism from the second one, *viz.*, the marginal productivity mechanism. We assume

1. Two kinds of productive services with unknown prices z_1 and z_2
2. Two kinds of produced commodities with unknown prices p_1 and p_2
3. Demand elasticities equal to unity, depending only upon the price of the good in demand, *i.e.*, consumers' outlay being constant.

We denote by

S_1, S_2 the unknown output of the good produced,

D_1, D_2 the demand for these goods as function of their price

R_1, R_2 the available supply of productive services (say, of *labor* and *capital*)

$a_{1,1}$, $a_{1,2}$ the (known) amount of productive service 1 necessary to produce one unit of commodity 1 and 2, respectively,

$a_{2,1}$, $a_{2,2}$ the corresponding amount of productive service 2. We arbitrarily put the constant outlay for commodity 1 equal to that for 2, each equal to 10, the a-coefficients equal to 1, 2, 6, 4, respectively, and $R_1 = 1$, $R_2 = 10$. We have the following equations:

Price equals average costs: $a_{1,1}z_1 + a_{2,1}z_2 = 1z_1 + 6z_1 = p_1$

$$a_{1,2}z_1 + a_{2,2}z_2 = 2z_1 + 4z_2 = p_2$$

Supply equals demand: $S_1 = D_1 = 10/p_1$

$$S_2 = D_2 = 10/p_2$$

Full use of productive services: $R_1 = 1 = a_{1,1}S_1 + a_{1,2}S_2 = 10/p_1 + 20/p_2$

$$R_2 = 10 = a_{2,1}S_1 + a_{2,2}S_2 = 60/p_1 + 40/p_2$$

Solutions: $p_1 = 5$; $p_2 = -20$; $z_1 = -35/2$; $z_2 = 15/4$

As pointed out before, the negative prices for product 2 and productive service 1 are meaningless;[17] there is no full employment of all factors of production, on the basis of the data.

No specific illustration can be given which would show that an equilibrium system of equations in which the coefficients of production are variable, need not possess meaningful solutions either. The lack of reliable empirical material prevents a precise determination of the limits of the second mechanism. However, general observation renders it very likely that such limits exist, and that we are not entitled to expect from the marginal productivity mechanism the absorption of displaced workers beyond a certain, probably narrow limit. The present writer hazards the guess that in industry proper, as contrasted to agriculture and mining, the marginal productivity is very inelastic over the range beyond the combination of capital and labor which was obtained after the World War. To realize this more clearly, we only have to visualize a modern industrial enterprise like a steel plant, fully utilized in the short run, and to ask in what way and to what degree the plant, without increasing the quantity of equipment, could employ more labor if the wage level were lower. Certainly, a number of minor changes in the quality of equipment are possible which would permit employing more labor (say, for cleaning purposes); furthermore, by the removal of some gadgets of minor importance, capital might be set free, which, if added together for all steel plants, allows the establishment of a new steel plant that would absorb labor. However, to the present writer, it seems very doubtful that the total increase in employment caused by such methods could be of larger order of magnitude than a small percentage of the original volume of employment.

[17] The emergence of both, a negative price of the productive service and a negative price of the good produced, is accidental. We could construct cases in which a negative price of the service arises despite of all prices of goods being positive.

Marginal productivity theorists, however, sometimes envisage another type of technical change. The era in which the puddling process was replaced by the Bessemer converter and by the open hearth process (processes requiring a much higher amount of capital per worker than used before) was also the era of rising wage rates. Would not a sufficient lowering of wage rates revert the development and bring about the application of older processes requiring much less capital per worker? This argument overlooks that, even at a considerably lower wage rate, the puddling process may be less profitable than the open hearth process. In other words, the transition from one process to another is not correctly described by moving along a given marginal productivity curve for capital; a shift in the curves was caused by technological progress.

The detailed investigation of the elasticity of marginal productivity curves and the classification of industries according to this elasticity is one of the most important tasks of an empirically founded theory of employment. It must be repeated that it is pure guesswork to assume, as the present writer does, that highly capitalistic industries have a smaller elasticity than the little capitalistic industries, particularly agriculture and mining. However, there is also a theoretical argument showing that under the conditions of modern industry the marginal productivity mechanism needs not always secure general long-run equilibrium. If to the Walras equation system, described above, a new set of equations is added, indicating the choice of methods of production as contingent upon the prices of productive services, then some of the obstacles are removed that may prevent meaningful solutions to materialize for the price and output magnitudes. But, by such an introduction of *variable* coefficients of production, a new difficulty is added at the same time.[18] The marginal productivity mechanism can be considered to solve, theoretically, the unemployment problem in the long run only if equilibrium can be obtained *for any possible combination of capital and labor*. But it is a well-known mathematical fact that this is the case only if economics of large scale are completely absent (or, to express it in a more sophisticated way, if the production function is homogeneous of the first degree); then, and only then, the sum of factor remunerations according to their marginal productivity would just equal the market value of output, creating neither profit nor loss to the entrepreneur, whatever the combination of labor and capital. If, on the other hand, economics of the large scale are present, general

[18] We cannot discuss here the complicated but most realistic case in which fixed and variable coefficients appear in the production of one and the same good. Neither can we analyze the peculiar instance of variability in which the ratio of productive services employed is always the same, however large the output of the firm, although the absolute amount of input per unit of output declines with rising output.

long-run equilibrium is still possible, but only for *specific* combinations of labor and capital. The implications of this theoretical proportion are not yet fully explored. One thing is certain, however; the marginal productivity mechanism, currently at work in absorbing labor if wage rates decline, may fail, by itself, to secure general long-run equilibrium, and to eliminate permanent unemployment in the neo-classical sense.

The present writer is quite far from denying that the two mechanisms discussed in the preceding paragraphs are significant in absorbing unemployment. However, in a stationary state, with equipment given as to quantity they will work only very slowly. Even if wage rates declined, it would take a long time before an entrepreneur starts moving the immobilized resources from one industry to another, and further time till the process is completed; likewise, a change in the methods of production under the influence of lower wage rates is slowly started and slowly executed. It is only in a progressive state that the two mechanisms obtain a greater weight by directing investment into channels in which the new equipment will employ more workers per unit than if the wage level has not declined. However, to the largest extent, it is the expansion of the economy *itself*, *i.e.*, the changes in the *quantity* of equipment, that all the time has absorbed displaced labor. Before commenting on this process, however, we must take time out to revise the tentative definition of the labor-saving device given in Section II.

VI. A Working Concept of Labor-Saving Inventions. Demand Elasticities Equal to and Larger than Unity

The introduction of the marginal productivity concept permits us to formulate a less objectionable definition of the labor-saving device; at the same time we shall be enabled to ascertain how far the results of the first section, obtained for a demand elasticity smaller than unity in industry A, are applicable to demand elasticities equal to and larger than unity. We describe, in the usual fashion, the production process in industry A by a marginal productivity function, here for labor (product measured in terms of current prices); the area below the curve indicates the volume of output, produced by coöperation of a given volume of other factors (here "capital") and a varying amount of labor (OL); the wage rate is considered equal to the marginal product of labor ML.

The technological progress in question would be indicated by a shift in the function, which at least partly would be upwards, and must satisfy the condition that the current output can be produced now with a smaller amount of labor OL_1 (*i.e.*, $OPML = OP_1M_1L_1$). Now if the progress is of the type indicated in Figure 1 (where the marginal productivity of labor is raised, for any amount of labor $< L$), then entrepreneurs will not be satisfied with producing the same output as before

but will plan from the outset an increased quantity of output and hire more labor than L_1, because both M_1L_1 and $M'L$ exceed the current wage rate. This adjustment of equipment in A differs from the adjustment, discussed for B, C, etc., in the preceding sections, because the latter would be *induced* by declining wages and executed along a given marginal productivity function, while the adjustment now under discussion is "spontaneous," *i.e.*, brought about by the labor-saving device itself; obviously the entrepreneur, in applying the new devices would not have greater difficulties in planning an output $OP_1M'L$ than $OP_1M_1L_1$. In the present case, he plans new equipment; in the former case, he adjusts existing equipment.

The volume of output would, however, be governed also by the price

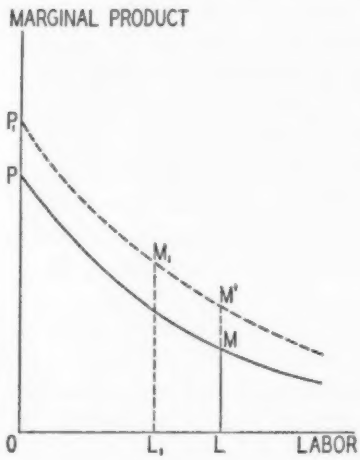

FIG. 1

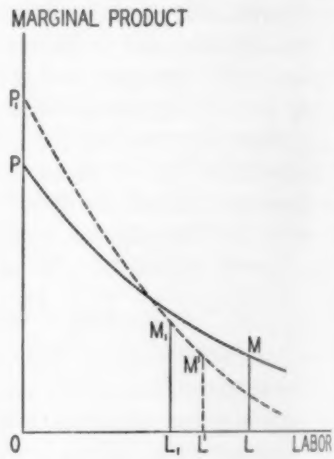

FIG. 2

change caused by the increase in output itself. The degree to which such price changes are foreseen by the entrepreneur and taken into account in planning the new equipment is naturally different under different forms of competition. Anyway, the volume of output and employment eventually emerging will be influenced by the elasticity of demand for the product. The following rules do not require detailed comments: (1) Output in A will be larger after the introduction of the new device than before (except for a completely inelastic demand); for otherwise the price would not fall and with an unchanged price the urge to hire more laborers at the old wage rate would be overwhelmingly strong. (2) Other things being equal, the larger the demand elasticity, the smaller the displacement of workers in A; with a sufficiently large demand elasticity the industry may even attract labor.

Increase in the labor force is impossible under the second type[19] of technological progress depicted in Figure 2, where $OP_1M_1L_1$ again equals OPML, but where the new curve lies partly below the old one, to the left of L. Even under an infinitely elastic demand, it would be impossible to increase output to such an extent that no displacement occurs, unless, of course, the wage level declines. Since such a decline is usually not foreseen, the entrepreneurial plans would refer to employment OL′ and leave some amount of workers to be absorbed in B, C, etc., either, in the short run, by better utilization, or, in the long run, by an adjustment of the equipment.

We find, therefore, three alternative definitions of labor-saving devices installed in an individual industry. The widest one would include inventions that (1) reduce the amount of labor necessary to produce the current volume of output, *and* (2) cause, at the current wage level, a displacement of labor in the industry concerned, because of a small elasticity of *either* the new marginal productivity curve *or* of the demand for the goods produced; this definition would cover also type (1) above (Figure 1). A somewhat narrower definition would cover only such devices which, besides satisfying condition (1) above, cause a displacement because of the low elasticity of the marginal productivity function, *regardless* of the demand elasticity; this definition corresponds to type (2) above. The narrowest definition would include only devices which also would cause a displacement if the *current* wage rate is replaced by a *minimum* rate, fixed from the viewpoint of social justice.

If the present writer's conjecture is correct that, in industry proper, the marginal productivity of labor (in the long-run sense) tends to become less and less elastic the more capital is employed per worker, then the difference between the second and the third definition would be small, because even a substantial reduction of wage rates in A would not increase employment to a considerable extent. On the other hand, the difference between the first and second definition is very likely of great practical importance. Many devices which would not prove labor-saving if the market price of the commodity remained unchanged will become so on account of a low demand elasticity. Labor-saving inventions according to the first definition are, therefore, frequent, and only the compensatory effects of changes in the quality and especially in the *quantity* of equipment have prevented net technological unemployment from taking vast dimensions.

The present approach to a working definition of labor-saving inventions differs from the definition as elaborated, on the basis of Professor Pigou's work, by Professor Hicks.[20] Hicks calls an invention labor-

[19] We disregard here the further type in which, at the given wage level, it is most profitable to produce less than before.

[20] J. R. Hicks, *Theory of Wages* (1932), pp. 122 *ff*.

saving if the relation of the actual marginal productivity of labor to that of capital is lowered. He considers, therefore, the effect of the invention on the position of labor in the *whole economy,* assuming that the long-run adjustment of the quality of equipment is realized throughout, and that the ensuing changes in the price relations of commodities are insignificant; the question whether an invention creates unemployment, cannot arise, since all short-run unemployment is supposed to be reabsorbed. The exact relation of Hicks's definition to ours is complicated and cannot be discussed here for lack of space.

VII. Changes in the Quantity of Equipment

In actual fact, the reabsorption of displaced labor has been brought about, to by far the largest extent, by the accumulation and investment of capital; much more, indeed, than by the processes analyzed in the preceding sections. It never has been doubted by any theorist of rank that accumulation of capital in the form of fixed equipment raises the demand for labor; Marx especially,[21] consistently expounding the paramount ideas of the Ricardian system, depicts the capitalistic process as a race between displacement of labor through technological progress and reabsorption of labor through accumulation. The same view has been expounded with great clarity by a modern "marginalist" economist, L. V. Birck.[22] Quite naturally, this approach has not been considered satisfactory by the "harmonistic" economists of the Law of Markets School or Wage Fund School; displacement and accumulation are two largely *independent* factors, and it is impossible to predict the outcome of the race between the two on purely theoretical grounds. Marx believed, mainly on the basis of the experience of the twenties and thirties of the last century, that displacement more and more would outweigh accumulation, but the experience of the fifty years after the publication of the first volume of *Kapital* refuted his forecast. On the other hand, the experience of the last twenty years is less favorable, at least more controversial.

This side of the question need not be followed up in this paper. More important is a theoretical qualification. Without doubt the two contestants of the race are not *entirely* independent. A rise in aggregate income, generated by technological progress, would increase also the rate of accumulation (per time unit), and thus speed up the reabsorption of labor. However, the proposition that "permanent" technological unemployment is impossible does not find much encouragement in this

[21] K. Marx, *Kapital,* vol. I, chap. 23. In popular literature (and sometimes even in scientific writings), capital accumulation and technological progress are frequently confused, and Marx is credited with an opinion opposite to that which he really held.

[22] "Theories of Overproduction," *Econ. Jour.,* vol. 37, pp. 19-32.

fact. First of all, the favorable effect on accumulation can only materialize if a "moving equilibrium" is preserved in the economy; if, contrariwise, displacement of labor (in the absence of compensatory investment) by reducing consumers' purchasing power ushers in a depression, the favorable effects on accumulation of displacement might not materialize. Even more important is another reflection: the amount of capital needed per worker according to the "nature of the industry" is a timeless magnitude, in the sense that, though changing over time, it exists at any moment. Accumulation of capital, on the other hand, is a magnitude that possesses the dimension of time: so much *per week,* for example. The two magnitudes cannot be directly compared; the correct way of relating them is: it would take, at the old rate of accumulation, so many years of one man's wages to accumulate enough capital to re-employ one man; and at the new, presumably higher rate, this many years. Now what is important in this context is that the same process that reduces the number of years, by speeding up the rate of accumulation, also *increases* this number by enhancing the amount of capital per worker. Thus, even under favorable conditions (continuous prosperity), the rate of labor absorption through accumulation remains rather unaffected by the technological progress, and still can be considered as a largely independent variable.

The conclusion is inevitable: there is no mechanism within the framework of rational economic analysis that, in any situation, would secure the full absorption of displaced workers and render "permanent" technological unemployment in any sense impossible. How long the unemployment will last can be answered only by "economic biology," which, in an all-embracing economic-sociological approach, tries to evaluate the strength of all forces working in the society.

TAX SHIFTING IN THE MARKET PERIOD

By ELMER D. FAGAN

In the analyses of tax shifting, economists have concerned themselves primarily with the long-run period. Few of them have given attention to the short-run period; and none of them has studied the probable effect of taxes on prices in the market period.[1] The present article is concerned, therefore, with an analysis of the effect of taxation on the disposition and price of goods already on hand, under conditions of both pure and monopolistic competition.[2] In this analysis, it will be shown that taxes which affect the disposition of stock-on-hand also affect simultaneously the rate of output in the succeeding production period. In other words, it will be shown that the seller's market period plans and short-period plans are synchronized.[3] It is the reality of this synchronization which has dictated the substitution of a sequence analysis for the Marshallian static analysis in the present study.

In Part I of this analysis, it is assumed that sellers have on hand a highly perishable product for which there is neither the possibility of carry-over nor of self-use. In Part II, it is assumed that carry-over and self-use are possible. The two parts of the study are not, however, of coördinate importance. The problems considered in Part II certainly

[1] Throughout this study, market price refers to a price which is determined in the market period, *i.e., a* period in which the supply of a good cannot exceed the stock already produced and on hand.

[2] The reasoning and conclusions in this article are based upon the following general assumptions for both pure and monopolistic competition: (1) that taxes are general, (2) that taxes are viewed as permanent by taxpayers, (3) that taxes do not affect demand schedules, and (4) that "pure competitors" have identical cost and demand curves; and that monopolistic competitors also have identical cost and demand curves. The definitions of pure and monopolistic competition which have been adopted in this article are those which have been given by Professor Chamberlin in ***The Theory of Monopolistic Competition,*** 3rd ed., pp. 7-9. The analysis of the effect of taxation on price under monopolistic competition involves the following additional assumptions: (1) that there is complete price interdependence between sellers, and (2) that the effects of selling costs, the total of which is assumed to be constant, are represented in the demand curve for the product of each firm. Under these assumptions, any one firm may be regarded as a representative member for the group.

[3] In the present study, it is assumed that a producer's plans do not extend beyond the market period and the succeeding production period. The length of this succeeding period is assumed to be typical of the production of a particular commodity, with existing scale of plant. It is such a "succeeding period" which is called the "short-run period" in the present article.

correspond more closely to those encountered under actual conditions than do the problems considered in Part I. They also call for more elaborate analysis. Hence the major attention will be devoted to Part II.

The forms of taxation which are considered are those which, in the writer's opinion, are most likely to be imposed or increased in democratic states, *viz.*, specific sales tax, *ad valorem* sales tax, lump-sum tax, and net returns tax.[4]

I. Carry-Over Impossible

To the readers to whom this article is addressed, no argument is needed in support of the generalization that under conditions of pure competition and no reservation prices, price in the market period will not be affected by the imposition of any of the following forms of taxation: specific sales tax, *ad valorem* sales tax, lump-sum tax, net returns tax.

It is also clear that under conditions of monopolistic competition and no possibility of carry-over or of self-use, price in the market period will not be affected by either a lump-sum or a net returns tax. The effect on market price of a specific and an *ad valorem* tax under conditions of monopolistic competition requires, however, a brief explanation. The analysis is facilitated by the use of a diagram.

In Figure 1, volume of sales is measured along OX and price per unit along OY. For the volume of sales OH, marginal revenue is equal to

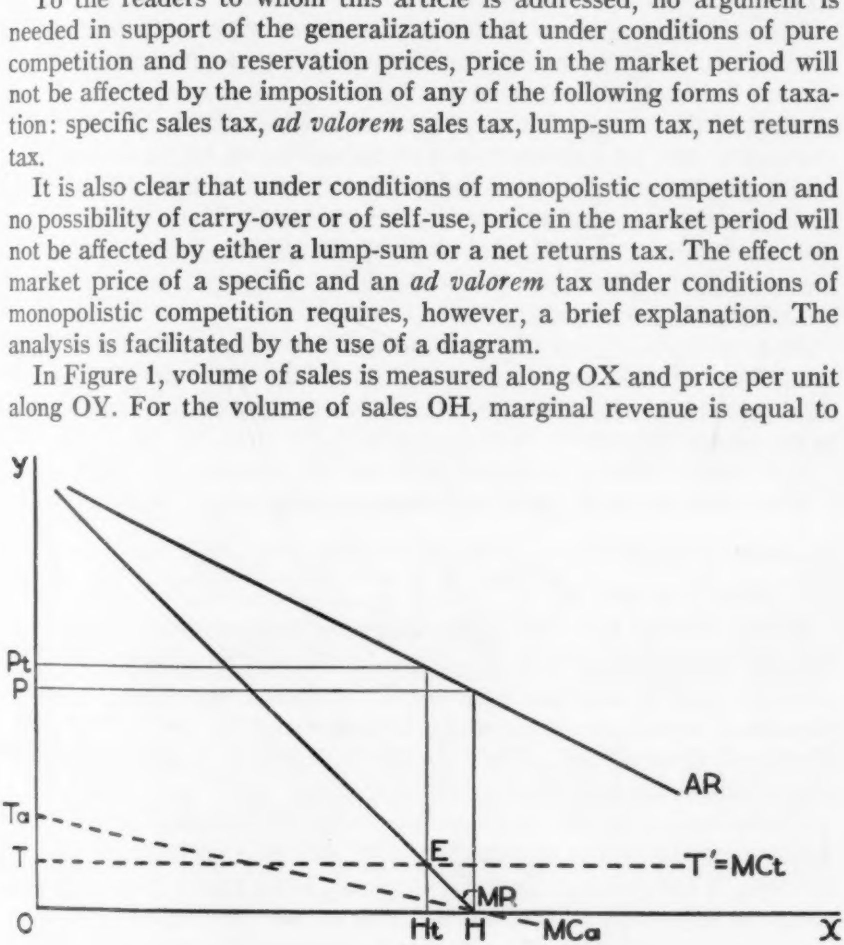

Fig. 1

[4] The effect of a gross receipts tax of a given percentage is, of course, identical with that produced by an *ad valorem* tax of the same percentage.

zero. Since cost of production, exclusive of tax, is "ancient history" in the market period, profits are maximized or losses minimized when marginal revenue is equal to zero. Therefore, the most profitable pre-tax volume of sales is OH. For this volume of sales, price is OP = \$10.00. If a specific sales tax of \$2.00, OT, is imposed, the marginal cost of the privilege of selling = TT′ or MCt. Marginal cost intersects marginal revenue at point E. This point of intersection establishes the most profitable post-tax volume of sales OHt. The decrease in the volume of sales from OH to OHt causes price to increase from OP to OPt.

If an *ad valorem* tax of 20 per cent had been imposed instead of the specific tax, the pre-tax marginal cost, *viz.*, zero, would have been increased for each several volume of sales by an amount equal to the product of the marginal revenue for each several volume of sales times the rate of the *ad valorem* tax. The imposition of an *ad valorem* tax would give the marginal cost curve TaMCa. This marginal cost curve intersects the marginal revenue curve at point H. The most profitable post-tax volume of sales is, therefore, identical with the most profitable pre-tax volume. Since the volume of sales is unchanged, market price is not affected. The tax is not shifted.

From the preceding analysis the conclusion is the following: Under conditions of monopolistic competition and no carry-over, a specific sales tax will, but an *ad valorem* tax will not, cause an increase in price in the market period.

II. Carry-Over Possible

A. Specific Sales Tax

1. *Pure Competition*

It is a familiar fact that under both pure and monopolistic competition the individual seller is in market equilibrium when his reservation price is equal to marginal revenue. Under pure competition, marginal revenue is equal to a price which is determined by the market equilibrium of demand and supply for the *industry*. The seller's curve of reservation prices is his market supply curve.

Variations in the volume of carry-over by the individual seller do not affect appreciably the marginal cost of storage, the relevant rate of interest, or the future price of the product. Since this is true, the seller might be expected, at first blush, to have only one reservation price for his total stock, *viz.*, a price equal to expected future price minus carrying costs. This would not be the case, however, if the seller faced either of the following conditions: (1) if he desired to retain a portion of his product for his own use, *e.g.*, a portion of his grain for seed; or

(2) if he made allowance for the increase in marginal risk aversion involved in an increase in the volume of his carry-over.[5]

In real markets sellers are usually affected by one or both of these conditions. It is clear that the presence of either or both of these conditions would produce for the individual seller a schedule of reservation prices rather than a single reservation price for his whole stock.[6] Such a schedule when represented graphically would result in a positively inclined market supply curve. The market supply schedule for the industry would be the sum of the amounts offered at each several price by all the sellers in the market. This schedule would also produce a positively inclined market supply curve for the industry. Price would be determined by the market equilibrium of demand and supply for the industry.

The individual seller will regard a specific sales tax as a deduction of an equal amount from the price of his product. Since the deduction would be identical in either the present or future market, it follows (1) that the tax would not alter the balance of economic attractiveness between the present and future market; (2) that it would not affect either the volume of sales or the price in the market period; and (3) that the tax would not be shifted. These generalizations must, however, be modified to allow for the influence of two factors. First, other things equal, sellers would probably prefer to wait and pay their specific taxes on future sales rather than to pay them in the present on present sales.[7] This preference for deferred taxation would, of course, cause a decrease in the volume of sales in the present market and would cause an increase in market price. The magnitude of the price increase would

[5] This risk refers to the risk incident to market fluctuations as distinct from such insurable risks as fire, flood, etc. The costs of the latter are, of course, included in the carrying costs. The term "risk allowance" when used in the following pages refers to the allowance for the former type of risk. The importance of this factor was suggested to me by my colleague Professor Edward S. Shaw who has shown the importance of the risk factor in his stimulating study: "The Elements of a Theory of Inventory," *Jour. of Pol. Econ.*, vol. xlviii, pp. 465-85.

[6] The fact that the presence of condition (1) would give an upward slope to the market supply curve calls for no explanation. The risk factor will also tend to give an upward slope to the supply curve. Since the seller is not certain that he will receive the "expected future price" for his product, it is clear that the greater the volume of carry-over, the greater the financial risk involved, relative to his total economic position. This increase in the proportion of his total resources subjected to risk would cause an increase in marginal risk aversion. Because of this increase in marginal risk aversion the seller might be willing to sell a portion of his stock at a price equal to the difference between (a) a price somewhat lower than the expected future price and (b) carrying costs. This would, of course, give an upward slope to the market supply curve.

[7] Hereafter, this preference for deferred taxation will be referred to as tax discount. The preference for present over future revenue from sales is a factor which played its part in the determination of the *pre-tax* balance of economic attractiveness and of the *pre-tax* allocation of sales between the present and the future market.

depend upon (1) the rate of the tax, (2) the relevant discount rate, (3) the length of the period of time between the present and future market, and (4) the elasticity of the market demand for the product. Second, the tax might also upset the balance of economic attractiveness between the present and future market, in favor of the latter, by causing expected future price minus carrying costs *and tax* to become greater relative to present price *minus tax* than was the expected future price minus carrying costs relative to present price. This factor, like the first, would cause an increase in market price.

2. *Monopolistic Competition*

No argument is needed here in support of the generalization that either a monopolist or a monopolistic competitor who is selling in two markets which are completely separated spatially, so far as buyers are concerned, will maximize his profits by producing an amount at which marginal cost of production for the entire amount sold in both markets is equal to "aggregate marginal revnue." The portion of the total output which will be allocated to each of the two markets will be an amount such that marginal revnue in the two markets will be equalized.[8]

These generalizations are also valid in the case of either a monopolist or a monopolistic competitor who is selling in two markets which are completely separated temporally. Let us assume that a monopolistic competitor has decided upon the most profitable disposition of his present stock between the present and future markets. In reaching this decision he must have considered the nature of both the marginal revenue and the marginal cost curves in the future market. In other words, his decisions concerning the volume of sales in the market period and in the short-run period must have been made simultaneously.[9]

The effect of the imposition of a specific sales tax on the seller's decisions and, consequently, upon market price can be shown most clearly by the use of a diagram.[10]

[8] For the argument in support of these generalizations, see Joan Robinson, *Economics of Imperfect Competition*, 1934, pp. 181-85. There Mrs. Robinson explains the nature of "the aggregate marginal revenue curve" which she employs. The present writer has adopted Mrs. Robinson's terminology.

[9] In this article, it is assumed that the expected future price from which the seller subtracts carrying costs and risk allowance in order to establish reservation price is the short-run price, *i.e.*, price determined in the short-run period when the short-run period is defined as in footnote 3.

[10] In what follows it is assumed that prices and marginal revenue are expected to be higher in market II than in market I. If, however, it were assumed that prices in the future market were expected to be lower than prices in the present market, the producer could not, of course, equalize marginal revenue in the present and future markets in cases where the attainment of this objective would involve the transfer of goods from the future to the present market. In such a case the producer's volume of sales in the present and future markets would be such that the difference between the marginal revenue in the two markets would be reduced to a minimum. This would be achieved, in such a

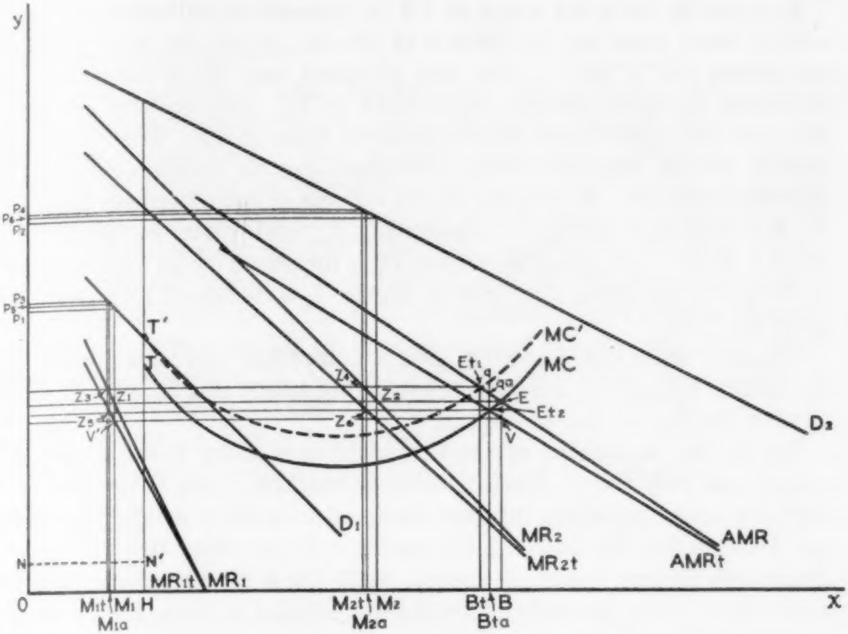

FIG. 2

In Figure 2, OX = output; OY = price; OH = stock-on-hand; OB = the sum of the volume of sales in both the present and future markets; D_1 = the demand curve or average revenue curve in the present market (market I); MR_1 = marginal revenue in market I; D_2 = the expected demand curve or expected average revenue curve in the future market (market II); MR_2 = marginal revenue in market II; AMR = aggregate marginal revenue in markets I and II, *i.e.* the sum of the abscissas of MR_1 and MR_2; and OHTMC = the marginal cost curve of the entire volume of goods offered for sale in both markets I and II. The marginal cost is, of course, zero for the stock-on-hand, OH. The marginal cost curve for the production in market II is TMC.

Marginal cost for the sum of the quantities sold in both markets I and II is equal to aggregate marginal revenue when the volume of sales in both markets is OB. The volume of sales in market I is OM_1. Marginal revenue at this volume in market I is M_1Z_1. Price in market I is OP_1. The volume of sales in market II is OM_2 or M_1B. Marginal revenue at this volume is M_2Z_2, and is equal to marginal revenue in market I. Price in market II is OP_2.

case, by selling total stock-on-hand in the present market and by producing and selling in the future market an amount at which short-run marginal cost would be equal to marginal revenue in the future market.

If a specific sales tax equal to TT′ is imposed, it will raise marginal cost at every point by the amount of the tax, giving the new marginal cost curve NN′T′MC′.[11] This new marginal cost curve intersects the aggregate marginal revenue curve AMR at E_{t_1}. This point of intersection fixes the seller's new total volume of sales at OB_t. The volume of sales in market I becomes OM_{1t}, marginal revenue becomes $M_{1t}Z_3$, and price becomes OP_3. In market II, the volume of sales becomes OM_{2t} or $M_{1t}B_t$, marginal revenue becomes $M_{2t}Z_4$, and price becomes OP_4. Short-run price, *i.e.*, price in market II, is increased by an amount equal to P_2P_4. Market price, *i.e.*, price in market I, is increased by an amount equal to P_1P_3.

Figure 2 does not, however, give a completely accurate picture of the seller's volume of sales and prices in markets I and II, either before or after the imposition of the tax.

Before the imposition of the tax, a rational seller would have considered not only the marginal revenue in markets I and II but also (1) carrying costs, including interest, involved in holding goods from market I to market II, and (2) the increase in marginal risk allowance. These two factors would, of course, make for a larger volume of sales and a lower price in market I; and for a smaller volume of sales and a higher price in market II than the respective quantity and price magnitudes which are shown in Figure 2. The most profitable volume of sales in each of the two markets would be such that MR_1 would be equal to $MR_2 - (CC + RA)$, when CC = carrying cost, including interest, and RA = risk factor.

After the imposition of the tax, the seller must consider an additional factor, *viz.*, the advantage of paying a specific sales tax in the future market rather than in the present market. In other words, the seller will discount a tax the payment of which can be made in the future. This new factor (TD), the desire to postpone the payment of a tax, will tend to decrease the volume of sales in market I and increase the volume of sales in market II. Its influence is directly opposite to that exercised by carrying costs and risk allowance. When all three factors are taken into consideration, the seller will maximize his profits or minimize losses by selling an amount in each of the two markets such that MR_1 will be equal to $MR_2 - (CC + RA - TD)$. If TD, tax discount, is less than $(CC + RA)$, the volume of sales in market I will be slightly greater than OM_{1t} and price will be slightly lower than OP_3. In market II, the volume of sales will be slightly less than OM_{2t} and price will be slightly higher than OP_4.

[11] The imposition of the specific tax TT′ would raise the marginal cost of *selling* any portion of OH in either market I or II by the amount of the tax. The marginal cost of selling any portion of OH would be raised from zero to ON, when ON = TT′.

B. Ad Valorem Sales Tax

1. *Pure Competition*

Other things equal, a seller will not hold a product for a future market unless he expects the future price to be higher than the present price by an amount sufficient to cover carrying costs and to offset risk allowance. The seller would see, therefore, that an *ad valorem* sales tax would be greater on the sale of a unit of product in the future market than on its sale in the present market. This fact would alter the balance of economic attractiveness between the present and the future market.[12] The seller would increase his sales in the present market (market I) and decrease his carry-over for the future market (market II) until price in market I, minus the tax, would be equal to expected price in market II, minus carrying costs, risk allowance, and the tax which would be assessed against the higher selling price.

The case can be explained most clearly by use of a diagram.

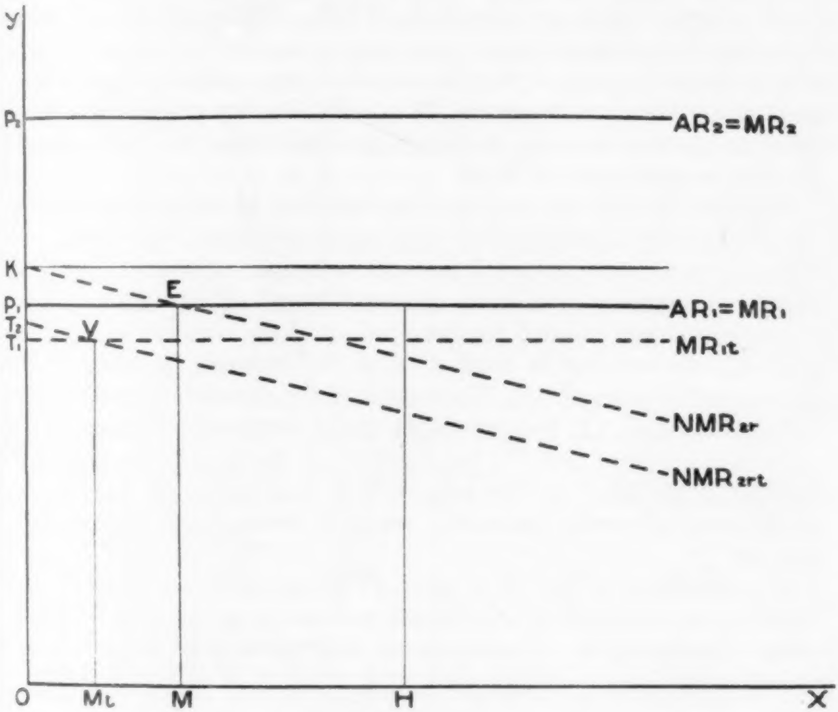

Fig. 3

[12] It is here assumed that the tax if paid on the sale of a unit of product in market II would be sufficiently greater than if paid on the sale of a unit of product in market I to more than offset the desire, other things equal, to postpone tax payment from market I to market II.

In Figure 3, OX = volume of sales; OY = price; OH = stock-on-hand; OP_1 = price in present market (market I); OP_2 = expected price in future market (market II); OK = expected future price minus carrying costs; NMR_{2r} = marginal revenue net of both carrying costs and risk allowance.

Before the imposition of the tax, the sales in market I = MH and carry-over for market II = OM. This distribution of stock-on-hand enables the seller to maximize profits or minimize losses. In market II, expected marginal revenue, net of carrying cost and risk allowance, is equal to marginal revenue and average revenue in market I.

After the imposition of an *ad valorem* tax of, say, 10 per cent, marginal revenue, net of tax of 10 per cent of \$10.00, becomes OT_1 in market I. Marginal revenue, net of tax, *i.e.,* MR_{1t} is lower at every point than MR_1 by \$1.00. In market II, the tax reduces NMR_{2r} at every point by an amount equal to 10 per cent of price in market II. Since price in market II is \$15, NMR_{2r} is made lower at every point by \$1.50. NMR_{2r}, net of tax, is represented by NMR_{2rt}. Marginal revenue, net of carrying costs, risk allowance, and tax, in market II is now equal to marginal revenue, net of tax, in market I when sales in market I are M_tH and carry-over for market II is OM_t. The tax causes the seller to decrease his carry-over for market II and to increase his sales in market I by an amount equal to M_tM.

Since the factors which affect the decisions of any individual seller are qualitatively representative of those which affect every other seller in the same market, there will be a reduction of carry-over for market II and an increase in sales in market I by all sellers of the product. Since the market demand for the product of the industry is negatively inclined, the increase in total sales of the industry in market I will cause market price to *fall.* The extent of the decrease in market price will depend upon (1) the magnitude of the increase in the total volume of sales in market I and (2) the elasticity of the market demand for the product of the industry. The seller will receive, net of tax, from the sale of each unit of product an amount equal to the new market price minus the tax.

A comparison of the effect on market price of a specific and an *ad valorem* tax shows that the former will cause an increase in market price. The latter, on the other hand, will cause a *decrease* in market price.

2. *Monopolistic Competition*

In the discussion of the effect on market price of a specific tax, under conditions of monopolistic competition it was shown how the seller must distribute the sales of his stock-on-hand between the present and

the future market in order to maximize profits or minimize losses.

Before the imposition of an *ad valorem* sales tax of, say, 10 per cent, the seller will maximize profits or minimize losses by selling his stock-on-hand, OH (Figure 2), by selling OM_1 in the present market (market I), and M_1H in the future market (market II). Production in market II will be HB. Total sales in both markets will be OB. Marginal revenue in market I will be M_1Z_1; and will be equal to marginal revenue in market II, M_2Z_2. Price in market I will be OP_1; and in market II, OP_2.

The imposition of an *ad valorem* sales tax will reduce the marginal revenue, net to seller, in both markets I and II and also the aggregate marginal revenue, net to seller, by a percentage equal to the rate of the tax. Under the assumption that the tax rate is 10 per cent, the marginal revenue curve, net of tax, in market I will be MR_{1t}; and in market II, MR_{2t}. The aggregate marginal revenue curve, net of tax, will be AMR_t.

The marginal cost curve for the total output in both markets, OHTMC, intersects AMR_t at point E_{t2}. This point of intersection fixes total sales at OB_{ta}. In market I, sales decrease from OM_1 to OM_{1a}. Marginal revenue, net of tax, becomes $M_{1a}Z_5$ and market price rises from OP_1 to OP_5. Carry-over for market II increases from M_1H to $M_{1a}H$. In market II, production falls from HB to HB_{ta} and sales decrease from OM_2 to OM_{2a}. Marginal revenue, net of tax, becomes $M_{2a}Z_6$ and price increases from OP_2 to OP_6.[13] The magnitude of the changes in price in the two markets is dependent upon (1) the rate of the tax, (2) the elasticity of the demand curves, (3) the slope of the marginal cost curve within the relevant range, and (4) the amount of stock-on-hand. If the marginal cost curve were absolutely inelastic within the relevant range, the volume of sales and price in market I would remain unchanged.[14]

It is now possible to compare the effect on market price of a specific and an *ad valorem* sales tax under conditions of monopolistic competi-

[13] Figure 2 does not indicate the influence of carrying costs, allowance for risk, nor the desire, other things equal, for the postponement of tax payment. The quantitative effect of the *ad valorem* tax on sales and prices as shown in Figure 2 are, therefore, not completely accurate. Complete accuracy can be achieved, however, by making the same modifications which were found necessary for the attainment of completely accurate results in connection with the diagrammatic analysis of the effect on market price of a specific sales tax under conditions of monopolistic competition. See above, p. 78.

[14] The reasoning in support of this generalization follows: If MC were absolutely inelastic it would lie along BE and would be cut by AMR_t at point V. Sales in markets I and II would be of amounts such that marginal revenue, net of tax, in these markets would be equal to BV. Since AMR_t is lower than AMR by 10 per cent at every point, EV is 10 per cent of BE. In other words, BV is less than BE by 10 per cent. Since BE and M_1Z_1 are equal, marginal revenue, net of tax, in market I must be 10 per cent lower than M_1Z_1. Marginal revenue, net of tax, in market I is exactly 10 per cent lower than M_1Z_1 at point V'. Since the abscissa of V' is equal to OM_1 volume of sales and price in market I are unchanged.

tion.[15] It has been shown in an earlier section of this article that a specific sales tax causes a reduction in sales in market I and an increase in market price.[16] The specific tax will always cause these results under the following conditions: (1) a negatively inclined marginal revenue curve in market I, (2) a negatively inclined aggregate marginal revenue curve, (3) a positively inclined or an absolutely inelastic marginal cost curve within the relevant range, and (4) the intersection of MC′ and AMR at a point with an ordinate lower than the ordinate of the highest possible marginal revenue in market I.

An *ad valorem* sales tax also causes a decrease in sales in market I and an increase in market price unless the marginal cost curve is absolutely inelastic within the relevant range. In that case, the volume of sales in market I and market price are unchanged.

If at the time either a specific or an *ad valorem* sales tax is to be levied the specific tax is a percentage of market price which is equal to the rate of the *ad valorem* tax, the specific tax, under a wide range of conditions, will cause a greater decrease in sales and a greater increase in price than would have been effected by the imposition of the *ad valorem* tax.[17]

A comparison may now be made between the effect on market price

[15] For a comparison of the effect of a specific and an *ad valorem* sales tax on short-run price, see E. D. Fagan and R. W. Jastram, "Tax Shifting in the Short-Run," *Quart. Jour. of Econ.*, Aug., 1939, pp. 562-89. In this earlier article, unlike the present, the short-run period was treated entirely independently of the market period. The difference in the effect of the two forms of taxation on short-run price are, however, qualitatively the same in both cases.

[16] See above, pp. 76-78.

[17] The conditions under which the specific tax will cause the greater increase in price are the following: The aggregate marginal revenue for the equilibrium output which would be established following the imposition of the *ad valorem* tax must be less than the price per unit of the untaxed sales in market I. That is to say, $B_{ta}Q_a$ must be less than OP_1. The conditions under which the comparison between the effect on price of the two forms of taxation is being made are satisfied if it is assumed that market price, OP_1, in Figure 2 is \$20, that the specific tax is \$2.00, and that the rate of the *ad valorem* tax is 10 per cent. Under these conditions, $E_{t2}Q_a$ is 10 per cent of $B_{ta}Q_a$. Since $B_{ta}Q_a$ is less than OP_1, $E_{t2}Q_a$ is less than the amount of the specific tax $E_{t2}Q$ which is 10 per cent of OP_1. Now MC′ passes through point Q. Since MC′ slopes downward to the left of point Q, and since the negatively inclined aggregate marginal revenue curve, AMR, passes through point Q_a, MC′ cuts AMR at E_{t1}, a point which is to the left of points E_{t2} and B_{ta}. This point of intersection, E_{t1}, fixes the aggregate sales at OB_t. This volume of sales is less than OB_{ta}, the volume which would have resulted from the imposition of the *ad valorem* tax. Since the aggregate volume of sales is less under the specific tax, aggregate marginal revenue, including the tax, is greater. Since marginal revenue, including the tax, in markets I and II is always made equal to aggregate marginal revenue, including the tax, and since aggregate marginal revenue, including the tax, is greater after the imposition of the specific tax than it would have been under the *ad valorem* tax, it follows that the specific tax would cause a greater increase in marginal revenue, including the tax, in markets I and II than would the *ad valorem* tax. The greater marginal revenue in market I corresponds, of course, to a smaller volume of sales and a higher price. Therefore,

of a specific and an *ad valorem* sales tax under conditions of pure competition on the one hand and monopolistic competition on the other. Under monopolistic competition, it has just been shown that the specific tax, under a wide range of conditions will cause a greater increase in market price than would have been effected by the *ad valorem* tax. Under pure competition, a specific tax will cause an increase in market price. The *ad valorem* tax will cause a *decrease* in market price.[18]

C. Lump-Sum Sales Tax

1. *Pure Competition*

Since the lump-sum tax is a tax of a fixed amount, the seller is not able to solve the problem of the most profitable post-tax distribution of his stock-on-hand between present and future markets on the basis of marginal adjustment. It is an all-or-nothing proposition. More specifically, the seller must sell nothing at all in market I in order to escape the payment of the lump-sum tax in the present market; and if he should sell all his stock-on-hand in the future market, there would be no *additional* taxes in that market.[19]

The seller's post-tax decision concerning the most profitable distribution of his stock-on-hand between markets I and II will depend upon the answer to the question: If total stock-on-hand were sold in market II, would probable receipts be sufficiently greater than receipts from the pre-tax allocation of sales of the same stock minus the lump-sum tax in market I, to more than offset additional carrying costs plus the money equivalent of additional risk aversion? If the answer to this question is Yes in the case of an appreciable number of sellers, the volume of sales in market I would decrease, and market price would increase.[20] If the answer is No in the case of all or of all except an inappreciable number of sellers, the most profitable post-tax volume of sales in market I would, of course, be identical or virtually identical with the most profitable pre-tax volume, and market price would be unchanged.

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it may be concluded that the specific tax would cause a greater increase in market price than would the *ad valorem* tax.

[18] The comparison of the effect on market price of a specific and an *ad valorem* sales tax under conditions of pure competition does not involve the assumption that at the time either tax is levied the specific tax is a percentage of market price which is equal to the rate of the *ad valorem* tax. See above, p. 80.

[19] It is clear that the tax would not alter the balance of economic attractiveness between markets I and II under any of the following assumptions: (1) that the tax were levied on the privilege of producing as distinct from the privilege of selling the product; (2) that the seller expected to have no further dealings in the product after he had disposed of his stock-on-hand; and (3) that the tax were levied only once in a fiscal period which was as long or longer than the relevant market and short-run periods combined.

[20] If the answer were Yes by all the sellers, market price would cease to exist.

2. Monopolistic Competition

Under conditions of monopolistic competition the seller must make his market and short-run decisions simultaneously, since any change in the volume of carry-over from market I to market II will effect a change in the price of his product in both markets. The pre-tax decision regarding the volume of sales in market I and the volume of production and sales in market II is the one under which the sum of the net returns in markets I and II is maximized. It follows, therefore, that the imposition and payment of a lump-sum tax of equal amount in both markets I and II will not cause the decision to be altered.[21] Since the tax is a lump-sum *sales* tax, it can be legally evaded by making no sales. For example, if no sales are made in market I no tax is paid in market I; and no *additional* taxes are paid in market II for the privilege of selling all or any portion of stock-on-hand in that market.

The seller will make no sales in market I if by so doing the reduction in the pre-tax sum of (1) gross receipts in market I and (2) quasi-rent in market II will be less than the amount of the lump-sum tax levied in market I.[22] The amount of the tax, the magnitude of the gross receipts in market I, the position and elasticity of the marginal revenue and marginal cost curves in market II are the factors concerning which the seller must have data before he can determine whether he would lose less by paying the tax in both markets and leaving his pre-tax allocations unchanged or by selling nothing in market I, paying no tax in market I, and altering volume of production and sales in market II. In the former case, market price would be unchanged; in the latter, it would cease to exist.

D. Net Returns Tax

1. Pure Competition

It is clear that the imposition of a proportional net returns tax will not alter the most profitable pre-tax distribution of stock-on-hand be-

[21] A seller who expected to sell only his stock-on-hand and then go out of business would sell none of his product if the lump-sum tax were greater than the largest possible gross receipts from his product. A seller who expected to remain in business over a period of time long enough to cover both the market and short-run period would close down if the amount of the lump-sum tax or taxes levied were greater than the sum of (1) gross receipts in the market period plus (2) quasi-rent in market II. Under such circumstances, he would, of course, dispose of his stock-on-hand if the lump sum tax levied in the market period were less than his largest possible gross receipts from the sale of his product. Under our assumption of identical demand and cost curves for all monopolistic competitors, any tax would affect all monopolistic competitors in the same manner.

[22] The seller will treat gross receipts in market I as net returns since the costs of producing such gross receipts are past costs.

tween markets I and II; and, therefore, will not affect either market or short-run price.[23]

The rate of progression of the tax on net returns might, however, be sufficiently steep to cause a change in the volume of sales and price in markets I and II. For example, let it be assumed that before the imposition of the tax the most profitable distribution of an individual seller's stock-on-hand was 50,000 units in market I and 5,000 units in market II. Let it also be assumed that sales in market I and market II would take place in two different fiscal periods. The sale of such a large percentage of the product in market I might yield net returns of a magnitude which would subject the seller to a tax rate so high in market I that his net returns, net of tax, would be less than if he were to sell less than 50,000 units in market I and more than 5,000 units in market II. If the tax affected in this manner a number of sellers sufficient to decrease appreciably the total volume of sales in market I, the negatively inclined market demand curve for the product of the industry would be cut at a point upward and to the left of the original point of market equilibrium; and market price would be increased.[24]

If the pre-tax distribution of the stock-on-hand of an appreciable number of sellers were such that they would sell a small percentage of their stock-on-hand in market I and a large percentage in market II, the imposition of a sufficiently progressive net returns tax would cause an appreciable reduction in the total volume of sales in market II, an appreciable increase in total sales in market I, and a *decrease* in market price.

2. *Monopolistic Competition*

If a seller has decided upon the most profitable pre-tax distribution of his stock-on-hand between markets I and II, the imposition of a proportional net returns tax would cause no change in volume of sales or price in either market. The pre-tax allocation of sales between the two markets would still yield the seller the greatest possible net returns, net of tax.

The imposition of a net returns tax with sufficiently progressive rates would, however, disturb the pre-tax allocation of product between and prices within the present and future markets. The reasons for this disturbance are the same as those which were given in the discussion of

[23] In this article, net returns means the excess of total monetary returns realized in any fiscal period from the sale of any quantity of product over the monetary rewards necessary to secure the services of the agents required for the production of that quantity of product. In what follows, it is assumed that the seller's total net income is from the sale of one commodity.

[24] It is conceivable that certain tax rate structures would result in a smaller total volume of sales in both markets than the seller's pre-tax allocations to these markets.

the effect on market price of a progressive net returns tax under conditions of pure competition. The fact that the reasons for the post-tax reallocation of stock-on-hand between markets I and II are the same under both pure and monopolistic competition does not mean, however, that the nature of the reallocation would necessarily be the same in the two cases. For example, under pure competition, the infinitely elastic demand for the product of the individual seller would make it impossible for him to decrease his realized net returns in either market I or II except by selling less in one market and more in the other. Therefore, the desire to decrease taxes paid in market II by an appreciable number of sellers will *always* be followed by an appreciable increase in total volume of sales in market I and a decrease in market price and conversely.

Under monopolistic competition, on the other hand, the degree of elasticity of the negatively inclined demand curves faced by the individual seller in markets I and II and the nature of the marginal cost curve in market II would determine whether a decrease or an increase in sales in either respective market would reduce realized taxable net returns and thereby increase net returns, net of tax.

USE OF FLEXIBLE TAXES TO COMBAT INFLATION[1]

By Albert Gailord Hart

Whether or not they are so intended, federal tax collections and expenditures unavoidably have profound monetary effects. Taxes may be regarded as analogous to Federal Reserve open-market sales, expenditures as analogous to open-market purchases. But besides being on a much larger scale than Federal Reserve operations, Treasury operations are more powerful, dollar for dollar. Federal Reserve operations are purchases and sales of securities which are almost perfect money substitutes. But the objects of Treasury operations are very unlike money. What the Treasury "sells" when it collects revenue is tax receipts; its purchases range from planes and typewriters to cancelled checks for old-age assistance. While Reserve operations affect only the composition of the public's capital assets, Treasury operations impinge, furthermore, on income accounts. Both these differences give Treasury operations powerful leverage.

It is no novelty to suggest that since federal budgeting has monetary repercussions it should be guided partly by monetary objectives. Manipulation of federal expenditures to stimulate employment has been practical politics ever since 1933; and manipulation of taxes is a familiar idea at least to academicians. But the war emergency calls for a shift in emphasis. Since the middle of 1940, defense has gripped the expenditure side of the budget, and monetary considerations can no longer affect the bulk of federal spending. If the budget is to be used consciously for monetary control—which at present means to check inflation—flexibility must be on the revenue side.[2]

The Treasury, the Congress and the general public are of course familiar with the idea that taxes are anti-inflation weapons—an obvious lesson of the world's long list of experiences with inflationary war finance. But the application of this idea in American public policy has taken the form merely of a rule of thumb—Secretary Morgenthau's

[1] The writer is indebted to his colleague E. D. Allen for criticism and suggestions.

[2] The writer does not mean, of course, that federal powers over the monetary situation are confined to taxation. Not to mention credit controls, a government borrowing program which stimulates saving can do a good deal to check inflation. But effects upon saving are likely to be second-magnitude unless loans are made compulsory; and compulsory loans may be regarded as sweetened taxes. (*Cf.* the writer's paper on forced loans at the Philadelphia meeting of the Tax Institute, Dec. 1, 1941, appearing in the forthcoming volume on *National Defense and Taxation*.)

rule of covering two-thirds of expenditures by taxation—and even this rule has not so far been made effective. Viewed as a standard for monetary policy, this is plainly inadequate. Economists should consider carefully whether it is not possible to recognize monetary needs explicitly as a guide to tax policy, and to reshape the federal tax system to permit following that guide.

I. Tax Mechanism for Monetary Control

In present circumstances, the monetary use of taxation means draining off spending power until the remainder is brought into line with consumer goods output. As we shall see presently, the scale of this drain must be enormous. Consequently its fair apportionment among the population is very important.

In view of the prospect that total consumption, in physical goods terms, must fall rather than rise during 1942, "fair apportionment" implies that nobody can expect to be left in a position to increase his consumption unless he is increasing his output, and that even people who increase their output cannot expect to increase consumption unless either their present consumption standard is very low or their contribution to added output very great. The only way to apply this rule is through income taxes.

The Timing Difficulty

Since the Treasury announced late in November that no further increase would be made in taxes on 1941 incomes, the regular income tax revenue of 1942 has been a settled thing; for taxes on 1942 incomes will not begin to come in, in the regular course, before March of 1943. While taxes collectible in 1943 will not be completely ineffective in 1942, their influence is somewhat unreliable,[3] and may even work in the wrong direction if they encourage individual households to stock up before their surplus over current needs is cut into by taxation.

One possible way to avoid this time-lag, of course, is to turn away from income taxes to sales or wage taxes, both of which are prompt in collection. But aside from the powerful arguments in equity against these taxes as major sources of war revenue,[4] it must be remembered

[3] *Cf.* U. K. Hicks, "Lags in Tax Collection," *Rev. of Econ. Studies,* vol. viii, no. 2 (Feb., 1941). Increasing 1942 corporation taxes will of course influence dividends during 1942; but unless earmarked cash is held against these taxes spending power may be increased through business investment. Individuals apparently react to taxes as they become payable, not as they accrue.

[4] The heavy burdens imposed by existing taxes of these and other regressive types upon low-income taxpayers are shown in Twentieth Century Fund, *Facing the Tax Problem* (New York, 1937); G. Colm and H. Tarasov, *Who Pays the Taxes?* (T.N.E.C. monograph no. 3, Washington, Supt. Docs. 1940); and A. G. Hart, E. D. Allen, *et. al., Paying for Defense* (Philadelphia, Blakiston, 1941). A fresh analysis of the problem of estimating tax

that both create powerful stimuli to demands for wage increases; while sales taxes, under present conditions, constitute price increases in themselves.

A Currently Collected Defense Tax on Individual Incomes

To combine the virtues of promptness and fairness calls for a currently collected tax on individual incomes—taxing 1942 incomes in 1942—along the lines proposed by the Treasury late last year. Following Canadian precedent, it would be most appropriate to label such a tax a "National Defense Tax." While such an innovation involves serious administrative difficulties,[5] they are no worse than those involved in alternative procedures; and since a tax of this character has permanent value, the work of solving these difficulties will not be wasted in the long run.

The basic technique of prompt collection is to withhold tax at the source of income wherever feasible—*i.e.*, for corporate dividends, for corporate and government interest payments, for other forms of property income wherever handled by fiduciaries or agents, and for the excess of salaries and wages over exemptions. For taxpayers whose income cannot be reached at the source—*i.e.*, for self-employed business and professional men, farmers, owners of rental housing, etc., possibly for employees of very small firms—a workable substitute can be found by requiring quarterly payments based on the annual income tax return for the previous year. Exemptions under Defense Tax should be fixed, as they are in Canada, below the regular income tax level—perhaps at or below $1,000 for a head of family.[6]

Equalization

Under a promptly collected tax, the final tax liability of each taxpayer cannot be computed precisely at the time of collection, but only approximated. Inequities among taxpayers of like income and family status can be cleared up, however, by an annual equalization at the time regular income tax returns for the year are filed in the following March. This equalization will involve extra assessments for some taxpayers, tax credits or small cash refunds (presumably through redemption of stamps) for others.

burdens is being prepared by C. Hildreth and the present writer for a projected statistical bulletin.

[5] For the nature of the difficulties and a demonstration that they are soluble, see Dr. Walter Heller's paper for the Tax Institute meeting of Dec. 2, 1941, Dr. Heller's memorandum filed in the Senate Finance Committee's *Hearings . . . on Revenue Revision of 1941* under date of August 13, 1941, the present writer's memorandum in the same place, and *Paying for Defense*, chap. XVI.

[6] On the need of lower exemptions, see *Paying for Defense*, chap. XV, and the forthcoming statistical bulletin referred to above.

The chief question of principle in planning an equalization procedure is whether to base both Defense Tax and regular income taxes on the same definition of "net income," or to permit deduction of one tax in computing net income taxable under the other. On the former system, which would be the present writer's first choice, the sum of Defense Tax and "normal tax" rates, plus the highest applicable surtax rate, would give marginal rates exceeding 100 per cent for some taxpayers as soon as Defense Tax exceeded 21 per cent. If all such combined rates exceeding 100 per cent were treated as *equalling* 100 per cent, the effect would be to impose a ceiling on the income left after tax. This ceiling would fall automatically as Defense Tax rose.[7]

Given a powerful tax of this type, the government would be armed with an effective weapon against inflation. A prompt and substantial revenue response would flow from any change in the level of tax rates or exemptions. Even with unchanging rates and exemptions, such a tax offers a limited automatic adjustment against inflation; for, with rising nominal income levels, not only a larger amount of income but also a larger proportion of the total would become taxable.

II. Criteria of Policy

Supposing a tax mechanism of this sort to be in working order, how should it be used? Since we are starting from a tax level below that necessary to check inflation, and since rising arms production implies an increasing inflationary pressure, we may safely answer, "More and more!" But to make this answer more precise calls for examining the objectives of policy.

Three Objectives

Monetary and fiscal policy should evidently aim toward:

1. A large volume of war production.

[7] Here are a few sample results:

Combined Defense Tax and Normal Tax Rate	30%	40%	50%
Level of "surtax net income" above which marginal rate is 100%	$300,000	$70,000	$32,000
Surtax at that level, 1941 rates	183,280	30,980	9,900
Normal tax, allowing maximum earned income	11,944	2,744	1,224
Defense Tax, assuming regular income tax exemptions	78,000	25,200	14,720
Residue of surtax net income	$ 26,776	$11,076	$ 6,156
Total net income, after taxes, adding in typical exemption (for head of family plus two dependents)	$ 29,076	$13,376	$ 8,456

These results somewhat understate the maximum amount left after taxation, since part of income-tax "deductions" are actually expenditures of which the taxpayer gets the benefit. This applies particularly to mortgage interest and property taxes of home-owners.

2. Within the limits of resources not needed for the war, a large volume of civilian production.

3. Avoidance of inflationary price increases.

As among these objectives, the first has a clear priority. As between the second and third, the second is presumably more important; but most economists would probably recommend sacrificing it to some extent to the third, if conflict arises.

Both production objectives, for reasons well known to economists, are likely to be favored by rising prices. Hence they may call for mild inflation, conflicting with the price objective. Since the impact of government spending is directly upon war production, however, even a very drastic tax program aimed to block inflation will not take hold very strongly in this field. The fiscal policy issue is principally between the price objective and civilian production.[8]

Price Dispersion and the Level of Civilian Prices

The degree to which price and production objectives conflict turns largely on the dispersion of prices. The presumption that a rising price level favors employment rests on the observations that prices do not all move parallel and that *absolute* price decreases are hard to achieve in many fields without unemployment. In short, to keep employment at a high level it is desirable that few absolute reductions of prices be called for. But since *relative* price adjustments must take place, it is a matter of arithmetic that, if there are fewer absolute decreases, there must be more absolute increases. Stabilizing the relatively falling prices implies raising the general index. How much the general index must rise depends partly on the dispersion of relative price movements, partly on how tenderly we wish to treat the relatively falling prices.

In the actual situation, it is plain that there is an upward drift in the prices of metal products, rubber products, silk stockings, woolen clothing, foods suitable for Lease-Lend shipments, and housing in defense areas, relative to more bulky and perishable foods, amusements, cotton clothing, and rents outside defense areas. This relative price shift has some value in drawing resources into the critical branches of production and diverting purchases to things which are relatively easy to

[8] Deflation in the sphere of civilian production can make indirect contributions to war production by creating unemployment and thus increasing incentives to find uses for men and equipment in war production. American history provides a shining example of the military value of unemployment in the naval efforts of the Revolution and War of 1812, when unemployment among sailors and fishermen created a formidable fleet of privateers, besides helping naval recruiting. But deflation is not properly selective in its pressure upon civilian industry, taking no account of the extent to which resources can actually be shifted to defense. The use of priorities and direct output restrictions (like that upon automobiles) in lines where resources are highly transferable has all the military advantages of deflation, without all its disadvantages for consumption.

produce, and still more as the only available procedure for deciding who is to get scarce goods, in the absence of consumer rationing.[9] Unless a widespread rationing system is to be adopted, these relative changes cannot and should not be resisted. If their income-effects on the sellers of the goods in question are unwelcome, the appropriate remedy is a system of excises-à-la-Henderson (in effect, special excess-profits taxes), applying to goods made scarce by war.

Suppose that the general rule is to try to prevent a downward drift of absolute prices from becoming so widespread as to affect more than 10 per cent of the weights of the B.L.S. cost-of-living index. If the average rate of downward drift for these falling prices is not to exceed, say, 2 per cent per month, the average monthly rate of increase for the other nine-tenths of the index cannot much exceed 0.2 per cent per month without raising the total index. This is a rather modest allowance, so far as the writer can judge. To give room for appropriate relative adjustments, without a serious proportion of absolute declines, is likely to call for an average monthly increase of 0.2 per cent to 0.5 per cent in the cost-of-living index.[10] If the price dispersion proves greater than this estimate implies, the rate of rise in the index required to keep down the weight of absolute decreases may pass the critical level (probably between 0.5 per cent and 1.0 per cent monthly[11]) at which price increases generate a "spiral." In this event, a clash between price and production goals cannot be avoided.

Administered Prices

The likelihood of such a clash is enhanced by the large element of "administration" in the determination of many of the wage rates and

[9] Until the last few weeks, journalistic advocates of "price control" as the remedy for inflation have shown no signs of realizing that we cannot simultaneously (1) have a national shortage of a commodity, (2) prevent its price from rising, and (3) let every buyer purchase all he chooses—*i.e.*, reduce the total of consumption without reducing any of its parts. This curious arithmetical error made price control appear as the last stronghold of "business as usual."

With the actual beginning of consumer rationing, price control begins to be seen more in perspective. But there still seems to be little realization that rationing must cover the bulk of consumer spending to be an effective barrier against inflation, and that tires, automobiles, and sugar cover only a very small sector. British experience indicates that the mere organizational difficulties of rationing will keep it from being very effective against inflation during 1942.

[10] This is frankly a guess. Studies of price dispersion in the period since February 1941 might improve it; but it is hard to evaluate the effect of our actual involvement in the war. We are operating so far outside the range of recent experience that the writer is very skeptical about the possibility of an accurate forecast of the necessary price dispersion.

[11] Increases more rapid than 0.5 per cent monthly in the B.L.S. cost-of-living index never continued long enough to show up in the recorded figures between 1920 and 1939; but through most of World War I the rate of increase exceeded 1.0 per cent monthly. See *Paying for Defense*, p. 182.

farm prices which constitute costs of production for producers of civilian goods. Even though more man-hours of coal-mining labor, or more wheat, could readily be found for sale at existing prices, the United Mine Workers in the one case and the federal government in the other are quite capable of raising miners' hourly rates and the price of wheat. In so far as the costs "administered" to higher levels are those of the civilian goods labeled above as relatively falling, maintaining the output of those goods comes to depend on an absolute increase in their prices. To prevent a decline in employment then calls for a corresponding acceleration in the rise of the general index, and the danger of a spiral is accentuated.

Since the people who "administer" prices keep one eye on the market, taxation can do something to block increases of this sort. General taxation of personal incomes, draining off spending power, will hold down profits; and excess profits taxes will catch the more conspicuous profits as earned. Still further, success of income taxation in checking the rise of living costs will reduce the demand for countervailing rises in money incomes. Thus tax policy can create a setting for a "reasonable" settlement of demands for higher wages and raw materials prices. But the primary responsibility in this field is not upon the monetary authorities but upon the government agencies and economic interest groups directly involved. To get the maximum benefit from monetary and fiscal measures against inflation, wage-rate increases should be discouraged unless the union demanding them can show (1) that a shortage exists and more man-hours of qualified labor cannot be had at existing rates; (2) that the union itself is not creating the shortage by its own exclusive policy or restrictive working rules. On the side of farm prices, where "administration" is actually done by the government, the rule should also be to avoid increases except where a shortage exists and where the shortage is not itself created to boost prices. In both fields, of course, many specific increases are urgently needed to increase supplies; prominent examples are cheese prices and seamen's wages.

Giving Ground before Administered Prices

If the groups responsible for holding down the administered prices do not keep them in check, most students of monetary problems would probably agree that monetary and fiscal policy should give ground and permit a corresponding upward drift of prices. Taxation should not be relied upon to stop price increases based on trade-union or farm-group action.[12]

If we constructed an index number of cost-prices underlying the pro-

[12] In the terminology of J. M. Keynes's *Treatise on Money*, monetary and fiscal measures are effective against "profit-inflation" but not against a spontaneous "income-inflation."

duction of civilian goods, under such conditions, it would have an upward drift for two reasons: (1) as with finished-goods prices, there is a natural dispersion of changes in cost-prices, and the relatively-falling group cannot be pushed wholesale into absolute decreases without adverse effects on employment; (2) as we have just seen, "administered" cost-prices in the relatively-falling group are likely in fact to be pushed upward from the supply side.

To a first approximation, the task of fiscal policy may be defined as the stabilization of the cost-of-living index—not absolutely, but relative to an index of cost-prices so composed and so weighted as to represent cost-prices affecting different consumption goods in the same proportion that the prices of the latter enter the cost-of-living index.[13]

This first approximation rule, however, may lead policy astray for two chief reasons: (1) the sheer technical defects of the index numbers used might be serious enough to give their ratio a misleading drift; (2) the relation of prices of materials and labor services to per-unit costs may be considerably altered by wartime changes in industrial patterns. Any policy based on the ratio of the two index numbers should therefore be at least slightly modified in the light of employment figures. If there came to be noticeable unemployment of types which defense could not absorb but freer consumer spending could, it would be desirable to set taxes lower than the formula would indicate. On the other hand, if employment were satisfactory while cost-prices and selling-prices were rising in line with each other, it would be worth imposing heavier taxes in hope of checking the cost-price advance.[14]

Relative Drift of Costs and Selling-Prices

The argument above limits the rôle of fiscal policy to keeping prices of civilian goods in line with their cost-prices. But this limited objective is very important in itself. For 1942, we must expect a substantial rise in national income relative to our supposed cost-price index, resulting from increased employment, longer hours, "upgrading" of laborers and similar shifts which contribute to the physical volume of total output. But while a corresponding rise in total output is scheduled, the war effort will not only absorb the increase but bite deeply into present

[13] This redefined price objective has a strong formal parallelism to agricultural "parity." But its implications for income distribution are very different, since it is thought of as enforced by manipulating an income tax rather than by manipulating the flow of goods to consumption.

[14] This presumption for a downward drift of selling-prices *relative to cost-prices* does not contradict our original argument for permitting a rise of selling-prices on account of price dispersion. Implicit in the original argument was an assumption that dispersion among cost-prices implied an upward drift in their average; and the allowance for an upward drift of cost-prices made in this section of the text thus takes care of the dispersion of selling-prices.

civilian supplies. Even if wage rates and so on did not increase, we should have increased spending power confronting reduced civilian supplies. This would certainly raise living costs.

The danger of spiral inflation lies in the fact that as living costs rise *relatively* to wages, wages tend to rise *absolutely* in a vain attempt to compensate. We have seen enough in 1941 to be clear that the danger of a spiral "income inflation" is no mere bugbear, even though full employment is not yet reached; and rising employment will further increase the danger. Choking off the relative rise of living costs is an essential part of the remedy.[15]

III. Necessary Revenues and Tax Rates

To hold inflation in check, we shall need more taxes to drain off spending power. But how much more? So far, the only answer offered by this paper is qualitative: enough to restrict the price rise as narrowly as possible, in view of price dispersion and the behavior of administered prices, without excessive unemployment.

Our monetary situation is packed with uncertain factors. We cannot accurately forecast, for example, the course of bank credit or the future of saving and of private investment.[16] Accordingly, no clear-cut answer can be found in advance of experience; and in the end the solution must be found by cut-and-try methods. But it is both possible and urgent to estimate the general order of magnitude of the requirements.

War and Consumption

To begin with figures of relative certitude, we spent rather over 12 billion dollars in defense in calendar 1941. In view both of the rapid acceleration during 1941 and of our actual involvement in the war, it is conservative to estimate that our war effort will absorb 20 billion dollars worth more in 1942 than in 1941, at 1941 prices. Our economy will also produce more—presumably by 10 to 15 billion dollars. Making optimistic allowances for the effect of increased total output and of drafts on private investment, it is hard to believe less than 5 billion dollars worth of the added war effort must be at the expense of consumption goods.[17]

[15] This assumes, as does most of the argument of this article, that we are not going to set up a full-blown rationing system at once.

[16] For an inventory of sources of uncertainty, see the writer's paper on "Safeguards against Inflation," *Rev. of Econ. Statistics*, May, 1941, pp. 85-86.

[17] Needless to say, the cut in physical consumption is not logically a mere residual. Large masses of resources used in 1941 for consumption (conspicuously for metal products) are both adaptable to defense and nonessential for civilian use. These must be transferred. On the other hand, we have some resources (chiefly in farming) which are specialized for consumer goods uses and will be more fully used in 1942. Increased flows of food, amusements, etc., will presumably go part way to offset transfers of metals, chemicals and textiles to defense. But 5 billion dollars is a conservative estimate of the net loss to consumption.

While the war will reduce physical output of consumption goods, it will increase money incomes. The increase in total production assumed above implies a rise of 10 billion dollars or more in money incomes, at 1941 wage rates, etc. Of this increase, 6 or 7 billion dollars would normally be added to spending. With 1941 tax revenues, 1942 spending would thus be 11 billion dollars or more too high relative to 1942 consumption goods output. If a price rise relative to wage rates of, say, 5 per cent is to be tolerated, there will yet remain some 7 or 8 billion dollars of excess spending to be disposed of.

In addition, if income taxes are to be the means of adjustment, we must allow for inter-group shifts of consumption. Assuming a 100 billion dollar national income and a $1,000 head-of-family exemption, at least 2 or 3 billion dollars of the income increase will accrue to people who remain below the taxable family income level.[18] The principle of ability-to-pay taxation implies letting families below exemption limits keep and enjoy any income increase they can capture. The income-tax-paying groups, therefore, must absorb not merely the whole cut of total spending but also a further cut to permit an expansion of at least 2 billion dollars in lower-income-bracket consumption. The total cut in spending required of income-tax payers is thus at least 9 billion dollars relative to what they would normally spend with their 1942 incomes, or perhaps 5 billion dollars relative to their spending in 1941.

Revenue Requirements

When a family's income is reduced, the effect is divided between a reduction in spending and a reduction in saving. For families in the income-tax brackets, much of the effect is bound to be upon saving. While no definite forecast can be entirely safe, it is very unlikely that the curtailment of savings will be less than a third of the taxes levied.[19] To reduce spending by 9 billion dollars thus calls for at least 14 billion dollars of additional revenue in 1942, compared with 1941.

Of the 14 billion dollars, about 7 billion dollars can be expected from revenue measures in force at the end of 1941—divided about equally between effects of 1941 enactments and effects of rising income levels.

[18] It must be borne in mind that a $1,000 head-of-family exemption gives a normal family with two children $1,800 of tax-exempt net income; and with allowance for "deductions" of normal proportions this means that such families will rarely be taxable unless total cash income exceeds $2,000. On a comparable exemption basis for a 90 billion dollar income, *Paying for Defense* (p. 148) finds 56.3 billion dollars (62 per cent) accruing to persons taxable. The effects of a higher general level of incomes in carrying more people above exemption limits are roughly balanced by the assumption in *Paying for Defense* of a $200 credit per dependent, instead of $400.

[19] In *Paying for Defense* (pp. 128-29) the effect of a similar type of tax is estimated to be half upon spending and half upon saving. The sharper effect on saving assumed here reflects partly the larger scale of the tax in question and partly the intentional bias of the calculation here in progress toward understating tax requirements.

Another 1 billion dollars or so may be looked for from special excises of the type proposed by Leon Henderson, upon goods made scarce by defense. This leaves 6 billion dollars to be found by the proposed Defense Tax, at a minimum figure. In view of the prognosis for a continued rise of production and incomes well through 1942, it is probable that requirements will be heavier in the second half-year than the first.

Tax Rate Requirements

Since the proposed exemption level is well below the range of income tax experience of the federal government, the amount of income which would be taxable under Defense Tax is hard to estimate. If taxpayers enjoy two-thirds of the national income, about 33 billion dollars is likely to be taxable.[20] The 6 billion dollars of Defense Tax revenue mentioned above would thus imply an 18 per cent rate of tax. For every additional billion by which spending had to be curtailed, an additional 5 per cent or more of Defense Tax would be needed, unless exemptions were further lowered.

Probable Errors of Estimation

The estimates presented above have intentionally been given a bias toward understatement of tax requirements. Comparatively modest changes in the figures would make the tax rates called for look much more formidable.

To begin with, it would not be unreasonable to put the decrease in consumer goods output compared with 1941 at 6 instead of 5 billion dollars, the increase in money incomes (at 1941 wage-rates, etc.) at 11 instead of 10 billion dollars, the increase in spending at 8 instead of 6 billion dollars. This would raise the excess of spending to 14 instead of 11 billion dollars. After allowing a modest price increase, there would still be a net excess of 11 billion dollars or so. The additional consumption of the low-income groups not reached by tax could easily be put at 3 instead of 2 billion dollars, so that taxpayers must be called upon to cut spending 14 billion, instead of 9 billion dollars. If we put the effect of taxes on saving at 40 per cent instead of 33⅓ per cent, the additional taxes called for would be 35 billion dollars, or 28 billion more than existing measures will yield.

On this revised set of hypotheses, which is no more extreme in an upward direction than the previous set in a downward direction, the Defense Tax could not block inflation at any tax rate whatsoever,

[20] Of the 56.3 billion dollars shown as accruing to taxpayers under the roughly comparable situation sketched in *Paying for Defense*, p. 148, 30.3 billion dollars is absorbed by understatement, non-cash income exempt from tax, deductions, and exemptions, leaving rather less than half taxable. This proportion taxable should rise somewhat with national income at a higher level.

without a further reduction of exemptions. Even cutting exemptions to half the level suggested would probably not increase the tax base to much over half the national income, so that more than half of all taxables might have to be taken.[21]

Effects on Business Savings

In the argument above there is an implicit assumption that changing taxes upon individual incomes will not deter corporations from paying out a normal proportion of their profits. There are considerable indications, however, that even 1941 rates had such an effect; and the rates of Defense Tax mentioned above would doubtless intensify it. Whether dividends fail to reach the stockholder because they are not paid out or because they are taxed away, his spending will be reduced. But corporate savings, since they build up assets for the stockholder, will displace his individual savings more than would taxes of equal amount, while affecting spending less.[22]

Per billion of revenue actually raised by a Defense Tax, the effect upon spending would be greater than the estimates above would suggest. But per point of tax the effect might or might not be greater. If, say, a $1,000 dividend payment was withheld to avoid $250 of Defense Tax, the effect on a middle-income stockholder would probably be to reduce his personal savings by, say, $500 to $950, and his spending by $50 to $500, according to his situation. The effect on spending might or might not be greater than if the dividend and the $250 tax were both paid.

To avoid inequities between stockholders who were and were not able to avoid taxes by letting corporate incomes be plowed back, some device for taxing undistributed profits to the stockholders would be needed. Such taxation is thus a corollary of a Defense Tax upon incomes, if Defense Tax rates are to be substantial.

IV. Fiscal Management under Mandatory Rules

The criteria of policy discussed above would be suitable for a discretionary authority backed by the full confidence of the Congress and the public. They might conceivably serve Congress if it were decided to make frequent adjustments in Defense Tax by special enactment. But they call for so much exercise of judgment in application that they could not well be used directly as a basis for mandatory instructions to the Treasury.

[21] At this very low exemption level, the great bulk of the population would be taxable. But exempting $250 per adult plus $400 per child would still remove a large fraction of the national income from taxation, not to mention the huge losses of tax base through understatement, failure to tax non-cash income, and deductions.

[22] The effect of corporate savings is analogous to that of forced loans.

The question now arises whether a working substitute can be devised which will lend itself to mandatory arrangements. In short, we must look for a formula which is at once:

1. Definite enough to limit Treasury discretion and if possible to forestall litigation;
2. Simple enough to be explained to the general public;
3. A good approximation in its effects to operation under the criteria described above.

Pre-Determined Rates

The established system of revenue-raising is of course to pass a tax with definite pre-determined rates. These rates may be set until further notice, or they may be enacted on a step-wise system, with an increase to be effective at some stated future date.

As we have noted, even a flat-rate tax to apply through the war period would mitigate inflationary pressures. At a 100 billion dollar level of income, 1 per cent of tax represents an annual revenue between 300 and 350 billion dollars. As nominal income rose through inflation, not only the absolute revenue but also percentage of national income drawn in would rise somewhat. But if the initial rate were far short of what was required to stop inflation, this automatic braking effect would be far too small to bring the price level to rest within any measurable period.

In view of the prospect of increasing expenditures and of the political tendency to take off the little dog's tail in two bites rather than one, provision for a rate increase at some pre-determined future date is a relatively likely arrangement. So long as this prospect is not made an excuse for inadequate initial rates,[23] such a system will improve the time-shape of the tax revenue. With perfect foresight, it might even be made to serve all the purposes of fiscal policy. But in view of the gigantic uncertainties already noted, there is no use expecting to lay out an optimum timetable of taxation in advance. Pre-determined rates cannot do the job adequately, for lack of flexibility.

Price-Index Formulas

If a discretionary authority is ruled out, the economist's natural first thought for a flexible arrangement is a price-index formula. The present writer has made suggestions along this line on several occasions.[24]

[23] As Homer Jones points out in his paper for the Tax Institute meeting of Dec. 1, 1941, there is not much sense in the idea of introducing heavy taxes gradually "because they are so painful," in view of the painfulness of the alternatives.

[24] *Economic Policy for Rearmament* (Chicago, 1940, pp. 26, 33); House Ways and Means Committee, *Hearings . . . on Revenue Revision of 1941*, pp. 335-36; *Paying for Defense*, chap. XVII.

If we could assume that wages and farm prices were stable, except as relative increases helpful to defense took the form of absolute increases, such a price-index formula ought to turn out reasonably well. But as the argument above has indicated, a tendency toward "income inflation" through organized pressure on cost-prices would require complicating the formula and basing it on the relation of two index numbers rather than on one alone. This procedure is both unduly hard to interpret to Congress and the public and also liable to give undue weight to idiosyncrasies of the index numbers selected. In addition to this defect, there is a serious political defect—the danger that the mere presence of a tax formula geared to living costs would accentuate wage and farm-price pressures.[25]

Government-Expenditure Formulas

Less congenial at first thought to an economist, but still very promising economically, are proposals in political quarters for formulas hitching tax rates to government expenditures. These have been framed in terms of annual adjustments to secure an "automatically balanced budget."[26] But there is no reason why this type of formula should not be applied both to standards of coverage below 100 per cent (for instance to the Treasury's two-thirds rule) and to quarterly or even monthly adjustments. The Treasury could be required to set a Defense Tax Rate for the oncoming three-month period which would bring total receipts up to any specified percentage of total outlays for the period. It would be possible also to provide for automatic lowering of exemptions to widen the tax base if necessary. Exemptions could be lowered either step by step as rates rose, or only after rates had reached a certain ceiling, say 40 or 50 per cent, without satisfying revenue requirements.[27]

[25] This point was emphasized by Carl Shoup in his "Choice of Tax Measures to Avert Inflation," *Rev. of Econ. Statistics*, May, 1941, p. 89. If anything, it is more serious if wage rates and farm prices as well as living costs enter into the formula.

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The Danger of Taxing Too Much

The economist's natural hesitation to endorse such a government-expenditure formula or "automatically balanced budget" springs from his knowledge that it is possible to tax too much. Under unfavorable conditions, attempts to balance the budget may increase unemployment (and incidentally may defeat their budgetary object by doing so).

But taxing too much is not the number one danger of the year 1942. Taxes on the books in December 1941 are expected to bring in about 14.5 billion dollars (cash basis) for the fiscal year 1941-42 or about 18 billion dollars for calendar 1942. At the lowest defensible estimate of outlays, this means covering out of taxes 45 per cent of outlays for the fiscal year, or 37 per cent for the calendar year. The 6 billion dollars of Defense Tax mentioned above as minimum requirement would bring tax coverage for calendar 1942 to about 49 per cent; to bring it to 90 per cent would take a Defense Tax of over 25 billion dollars. Even at a 90 per cent coverage, moreover, the cash deficit would be about as great as it was in the late winter of 1941, when inflation began to take hold.

A Safeguard against Over-Taxing

In any event, a simple safeguard against taxing too much can be set up by introducing a single discretionary element into the system.[28] The Treasury should be authorized to fix a lower rate than that called for by the formula, on the basis of a double finding of fact:

1. During the latest three months the B.L.S. living-costs index averaged not more than 1 per cent above its level in the last preceding three-month period; *and also*

2. During the latest three months, nonagricultural employment averaged either:

   a. Less than at the end of 1941 or

   b. As much as 1 per cent below the last preceding three-month period.

In such a situation, this limited exercise of discretion could scarcely be

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[26] One such proposal, apparently not much noticed by economists, already has a legislative history. A resolution (S. R. 22) was agreed to by the United States Senate on Feb. 13, 1941, creating a committee of three "to find ways and means for an automatically balanced budget." This committee (consisting of Senators Tydings, Thomas and Holman) reported two months later, submitting two draft bills and a draft constitutional amendment as a basis for discussion. One of these bills (in a Committee Print of April 29, 1941, numbered J.313715-A) proposes enacting fifteen alternative schedules of taxes, each framed to raise 5 per cent more revenue than that preceding it on the list, and giving the Treasury mandatory instructions to put into force at the beginning of each year that schedule which will raise "the required amount of revenue" according to a standard set up in the bill.

[27] While Senator Tydings' tentative scheme does not confine itself to income taxes, the illustration of a difference between successive tax schedules which is presented in the committee report runs in terms of lowering income-tax exemptions.

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In such a situation, this limited exercise of discretion could scarcely be objectionable.

Needless to say, such an escape clause could come into play only if the proportion of outlays covered by taxes was very large. But the existence of such a clause would make it safe to aim high—even at 100 or 90 per cent of expenditure. There would be no advantage at all in fixing the proportion to be covered below 80 per cent. Thus such a policy

[28] This ingenious device for combining the simplicity of an expenditure formula with the substantive advantages of a rather complex price-index-employment formula was suggested by the writer's colleague Walter W. Wilcox.

would permit holding the growth of public debt to the minimum compatible with high levels of production.

Flexibility under Rules

This system of mandatory rules promises the advantages of a discretionary system on the lines outlined earlier in this paper, with a minimum of confusion in administration and public relations. It is calculated to provide the maximum anti-inflationary effect which taxes can yield without damaging production. If the "administered" prices are properly handled, it is capable of keeping the pace of price rise close to the rate below which the safeguard comes into play—presumably below the critical rate of 0.5 per cent monthly, once collection mechanism and rates are in force.

The two basic ideas involved are simple and close to the views of the general public:

1. It is desirable to "pay as we go" and limit the growth of public debt;
2. It is desirable to keep the weight of taxation from creating avoidable unemployment.

Either of these ideas alone is somewhat dangerous (the second, at present, more than the first). But a compromise along these lines should be workable both politically and economically.

FISCAL POLICY AND THE NATIONAL INCOME: A REVIEW

By CHARLES O. HARDY

Professor Hansen and Professor Villard have written books[1] which deal with the same theme—the use of national fiscal policy to control the levels of money income and of employment and productive activity. They are based in general on the same fundamental assumptions, such as the causal relation running from money income to real income; the tendency of an increase of saving to pull down money income and an increase of investment to increase money income; the extreme importance of stabilizing employment at a high level, and of reducing present inequalities of economic power; the probability that income taxes will tend to be paid out of savings and consumption taxes out of income that would otherwise be consumed; and a strong propensity for total income to decline from year to year in the absence of a public policy to stimulate expansion.

The two volumes bring home to us forcibly the instability of political-economic relations. Both are penetrating analyses, written for scholarly audiences, and combine a broad scope with careful attention to detail, and both were published in 1941. Yet neither author thought it worth while to give more than passing notice to the phase of his subject which by the end of 1941 was the principal topic of discussion; namely, the prevention of an unduly rapid rise of money income. For both authors, the fiscal and monetary problem was the prevention of deflation.

Obviously, if public expenditures are to be effective as an income stimulant they must be so financed as not to decrease other expenditures accordingly. Hence the choice for both authors is between deficit expenditures financed by borrowing from banks with excess reserves or from holders of capital balances (or conceivably by the issuance of paper money), and taxes that do not decrease either private consumption or private investment. Villard's emphasis is on deficit financing, the estate tax being the only important tax which he finds free from a suspicion of having "income-decreasing" effects. Hansen, however, is more concerned about the possible future disadvantages of the accumulation of government debt, the piling up of idle money in private

[1] *Fiscal Policy and Business Cycles.* By Alvin H. Hansen. (New York: Norton. 1941. Pp. ix, 462. $3.75.)

Deficit Spending and the National Income. By Henry Hilgard Villard. (New York: Farrar and Rinehart. 1941. Pp. ix, 429. $3.50.)

hands, and the indefinite lowering of interest rates; hence he pays more attention than does Villard to the possibility of financing income-creating expenditures through taxes that do not decrease private expenditures.

Both books contain good sketches of the history of post-war monetary policy, and both reach the conclusion that monetary policy alone is insufficient to bring about recovery from a deep depression, whereas fiscal policy is an adequate instrument. I am not prepared to dispute either conclusion, but both books leave me with the impression that monetary policy has lost the vogue which it had in the twenties, and fiscal policy has gained popularity, largely because monetary policy has been appraised by what was not accomplished, and fiscal policy by what was accomplished, during a period when both were being used together. If the slowness of recovery in 1933-39 discredits monetary policy as an instrument of control, the rapidity of recovery in the same years can hardly validate fiscal policy for the same purpose.

Both authors include state and local finance in the scope of "fiscal policy." Villard presents as an appendix an able original study of state and local deficit financing for recent years. Valuable as this material is for the use of students of public finance, I believe it has little bearing on the main theme, the relation of fiscal policy to the formation of income. State and local finance cannot properly be used as an instrument for controlling the level of income, for the simple reason that the costs of such a policy are localized and the benefits are diffused. In this respect, local finance is like individual and corporation finance. Expenditures by the national government may be justified by their effect on the national income, but an individual corporation, or a municipality, or a state, acting independently of others, cannot make expenditures and expect that it will be compensated by an increase of its income resulting from the stimulated increase of general income. The difference between national and local finance parallels the difference between central banking and private banking. Deficit spending for the sake of income-stimulation is practicable only for a national government, and probably only for that of a large country.

Multipliers.—Both Hansen and Villard devote much space, naturally, to the nature of the multiplier, and both make valuable contributions to the understanding of this knotty problem. Hansen presents an illuminating series of hypothetical model sequences, combining the effects of the multiplier and the acceleration principle. Villard criticizes half a dozen other writers' work, and contributes an excellent discussion of the character of "leakages."

With respect to statistical *ex post* calculations of the actual multiplier, Villard's treatment is less satisfactory. On page 232 he comes

very near to saying that such calculations are worthless, a conclusion with which I am inclined to agree. Any such investigation involves comparing an unknown product (the difference between actual income and what income would have been in the absence of the deficit), with a partly known multiplicand (the part of government expenditure which is financed by non-income-decreasing borrowings or taxes), on the basis of the general income velocity of money, which may or may not be the same as the marginal income period of new money.[2]

But Villard yields to the temptation to compute an empirical multiplier. He chooses the period from January 1934 through June 1936 because he believes that in that period there was little or no effective inducement for private investment, ignores the "hang-over" effect of government expenditures made in 1932-33, compares the excess of income in the second quarter of 1936 over the last quarter of 1933 with the quarterly average income-creating government expenditures of the period, and so deduces a multiplier above 6.[3]

Although Villard sees the uncertainties involved in such calculations, he seems to overrate the significance of this particular computation. He says (p. 361) that although we cannot be sure that there were neither indirect effects nor independent changes in other factors during this period, the calculation indicates that the increase in national income following 1934 "was not inconsistent with a multiplier as high as 6." This, of course, is true, but it is not clear that it was inconsistent with any other multiplier that might be suggested. In the next sentence the author's modest appraisal grows into the following claim: "Thus we know that it is possible for deficit spending to have a multiplier as high as 6, given the proper conditions, which shows that the theoretical work on the subject has not overestimated the possibilities of deficit spending." In other words, because it is possible for all factors combined

[2] One minor difficulty seems to have been generally overlooked. The general income velocity of money is computed by comparing income with the total supply of money, including that which is in capital balances. The income velocity that is needed for the purpose of calculating the multiplier is the velocity of that part of the new money which does not leak into capital balances. The income period relevant to the multiplier calculation is therefore shorter than the general income period. Except for very high leakages, however, the difference is not so great as that which J. M. Clark suggests on other grounds, namely, 2 months as against 4. Villard's criticism of Clark (pp. 151-53) seems to be sound.

[3] Villard does not explain why he compares the rate of income flow at the beginning of the period with the rate at the end, instead of cumulating additions to income for the whole period to get the product which corresponds to the definition of the multiplier. The two methods would give the same result if expenditures were steady and the multiplier were stable. In fact, however, the multiplier computed in this way is highly unstable. If we cut off the period at the end of 27 months instead of 30, we get a multiplier below 3. Cumulation of total income also gives a multiplier of about 3 (keeping Villard's simplification of substituting average for actual quarterly expenditure).

to increase the national income over an indefinite period of time by 6 times the amount of the deficit, we know it is possible for deficit spending alone to produce the same effect!

Villard, Hansen, and all the authors whose work is discussed by Villard compute multipliers on the assumption that leakages are permanent. In fact, however, leakage is in general simply the postponement of expenditure. The accumulation of a capital balance, whether by saving or by liquidating capital assets, does not imply a decision to hoard funds forever. What is involved is not a simple leakage ratio, but a schedule of the rate of leakage and the rate at which the funds that have leaked return to circulation. With any rate of leakage above zero, the capital balance accumulated from the leakage approaches 100 per cent as the rate of secondary expenditure approaches zero; but if there is any return flow out of the capital balance it will grow larger as the capital balance increases, and a point will be reached at which the return flow exceeds the leakage from the diminished secondary expenditure. The expenditures series, therefore, will not approach zero as a limit, but a perpetual cycle of rising and falling secondary expenditures will appear. Hence the value of the multiplier will always be infinity, even if leakage is 100 per cent, unless the return flow is zero.

Secular stagnation.—The most important issue raised by Hansen and Villard is the doctrine of secular stagnation, which is accepted by both authors as a proven thesis. The case for permanent deficit spending, or government spending financed by non-income-reducing taxation, stands or falls with this doctrine. If, for more than transient reasons, uninvested savings accumulate because there are not enough outlets for them (in the form of new investments that are likely to yield enough net income to make investment worth while), public policy must be directed either to discouraging saving or to supplementing income. On the other hand, if genuine investment opportunities, comparable to those which absorbed the enormous investments of the nineteenth and early twentieth centuries, are being neglected chiefly because entrepreneurs and savers now prefer the safety of capital balances to the possible gains of investment, research should seek to explain the decay of the propensity to invest, and public policy should be directed to encouraging the expansion of private investment.

Though for the moment obscured by the urgent problems of national defense, the issue is of paramount importance in planning for the post-war era. The quest of private profit through the investment of private savings gave us, in four generations, the greatest increase in mass standards of living that has occurred in the world's history; before we relinquish the hope of revival and further progress along these lines, and create the appropriate institutions for a society that cannot find uses

for its savings, the facts should be made perfectly clear. Particularly it should be clear that the failure of private investment to absorb savings in sufficient volume to maintain income is a result of technological factors, population changes, or other conditions outside the realm of public policy.

In my judgment the arguments advanced by adherents of the doctrine of secular stagnation are not strong enough to justify its acceptance as a basis of public policy. Some of the reasons for my skepticism may be summarized as follows:

1. If at a given time new investment is being held down by the lack of investment opportunities, existing profitable investments would be expected to command an unusually high price. The prices of stocks would be high and the yield of bonds would be low. The relative valuation placed by the market on very safe securities and risky ones, however, would be the same as in periods of high investment activity. In fact, this was not true during the depression of the thirties. Like other prolonged depressions, this was a period when the yield of very safe securities tended to be low and the risk premium tended to be high.

2. If the doctrine of secular stagnation were true it should be evidenced by keen competition for such new opportunities as do appear. Such inventions as are made should find backers more readily than in prosperity eras. In fact, the opposite was true throughout the "stagnation era," as in previous long depressions.

3. We should expect to find the transition from a period of abundant investment opportunity to one of inadequate outlets to be gradual. In fact we passed abruptly from the new era of perpetual prosperity to the new era of perpetual stagnation.

4. It must be remembered that the only "opportunities" that are ever conspicuous, or even certain, are those that have been seized upon. Had investors in the past refused to take the risk of building railroads, we should not know now that this opportunity existed all through the past century.

5. The explanations currently advanced to explain the inadequacy of investment outlets do not seem adequate. Hansen points out that of the three great historical outlets for savings—population growth, territorial expansion, and technological advance—only the third can be counted on in the future. He underestimates, I think, the importance of a fourth field, namely, the multiplication of equipment of types already known. Without any new invention whatever, the output of almost every factory and farm could be greatly expanded if capital were available to equip the average unit as well as the best are already equipped. A drainage ditch is not a new invention, but thousands of farms are inadequately drained. In the past the competition for capital arising

from the new opportunities has always prevented the complete utilization of techniques that were already common knowledge. Until the slackening of demand for extensive investment has made it possible to equip all industry so fully that every worker's output is the maximum that is technically feasible, we shall still have outlets for investment.

6. The decline of population growth means that less capital need be absorbed in maintaining the existing standard of living, but it also means that the possibilities of raising the standard of living are so much the greater, and the quest of higher standards does not seem to have lost its urgency. To provide one additional room for every family in the course of a decade would require far more investment in housing than is rendered unnecessary by failure to maintain our previous rate of population growth.

7. In fact, the technical situation in the housing field, viewed as an outlet for investment, has changed for the better in the last ten years, quite apart from the accumulation of a backlog through the slackening of building activity. Obsolescence of houses has gone on more rapidly in the last decade than at any time in the preceding half century. Air-conditioning, insulation, multiple baths, and built-in equipment constitute felt wants; the difficulty in supplying them is not on the demand side, except as demand is controlled by the shrinkage of income which is the result of the impairment of investment. At the same time, the development of automobile transportation has created opportunities for relocating the population and these opportunities have hardly been scratched.[4]

Finally, there is the question whether other conditions outside the hypothesis under review furnish an equally reasonable explanation of the slowness and weakness of the revival of investment after the recession of 1929-32. The only rival theory which it seems worth while to discuss relates to the changed impact of governmental regulation upon the inducement to invest—including under this caption taxation, wage policy and labor relations, price and rate controls, and supervision of the markets for money and capital. Of these, the most important are the two first mentioned.

[4] Villard comments (p. 344 footnote) that inventions likely to be exploited soon appear to involve expansion at the expense of existing industries; for instance, television or cheap airplanes would involve expansion at the expense of the motion picture and automobile industries. This, of course has always been true. The railroad and the automobile expanded at the expense of the stage coach and the horse and buggy; kerosene expanded at the expense of tallow candles and illuminating gas at the expense of kerosene and electricity at the expense of illuminating gas. All this is irrelevant. Investment in a new industry has never been retarded seriously by investors' concern over the fate of obsolescent industries. The destruction of capital values in old industries does not contract the flow of income to offset the expansion caused by the building of new industries.

The convincingness of a theory of politically-induced stagnation rests largely upon the fact that a pronounced change of governmental policy coincides neatly with the appearance of the phenomenon which we are trying to explain. The recession of 1929-32 was very severe, but if recovery had been equally rapid the accepted explanations would run in terms of business cycle theory rather than economic maturity. The slowness of recovery and the abortive character of the upswing of 1936, though they do find parallels in nineteenth century history, are sufficiently out of line with the usual business cycle sequences to make students look beyond business cycle theory for the explanation. But this is just the period in which public policy (unquestionably controlled by democratic processes) has for the first time in our history been expressed in a consistent series of policies that are unfavorable to investment.

This is not a blanket description of all New Deal policies. The bank rehabilitation policy, the program of direct loans to industry, and probably the unbalancing of the budget and the devaluation of the dollar were favorable to investment, and the N.R.A. was intended to be so. But after 1934, and especially after the failure of the "planned" recovery of 1936, public policy has evidenced more concern for social reform, regardless of its effects on recovery, than for the promotion of recovery.

Historically, until recent years, government, though operating through democratic machinery, was in fact dominated, in its economic aspects, by the ideas of investors and entrepreneurs. The rising standard of living of the masses of the nineteenth century was not the direct result of governmental pressure in the direction of higher mass incomes; it was the indirect result of the prosperity of business interests which were compelled by competition rather than by government action to share the fruits of progress with the remainder of the population.

In recent years, on the other hand, economic legislation has been the expression of a strengthened equalitarianism which seeks at the same time to push up the incomes of the masses by direct action and to cut down the incomes of the wealthy. For the first purpose the chief interest is labor policy; for the second purpose it is tax policy. The surtaxes on large incomes, even before the inception of the defense program, coupled with a failure to provide a system of averaging incomes, destroyed most of the incentive for the wealthy to invest in any but the safest securities. Discriminatory taxation on corporations cut heavily into another source of equity capital. At the same time, wage and labor policies were exerting steady upward pressure on costs.[5] In short, in a

[5] Hansen, in common with many others, argues (pp. 334-35) that when a wage reduction cuts down cost it equally reduces demand. This would be true only on the

period when we have had a deficiency of employment offers and a superabundance of would-be employees, we have tried to correct the balance by making the position of the employee more attractive and that of the employer less attractive. We depend on the profit motive to call forth a supply of investment, risk-taking, and employment opportunities, but direct our national policy to minimizing the share of profits in the national income. We depend on the minority of large incomes to provide the initiative and bear the risks incident to economic progress, but we strive to eliminate those inequalities.

This is not to say that the policies enumerated are necessarily unwise. They have advantages to offset against the disadvantages noted. If, as seems to be the case, we are deciding to commit an ever-increasing proportion of economic responsibility to political rather than to business leadership, economic life can go on under techniques of control that will be developed in line with the new ideals. My point merely is that a propensity of the capitalists to seek safety rather than profit, to shirk the responsibilities of investment, is a natural consequence of governmental policies which are inappropriate to an economic order controlled chiefly by private initiative under the profit motive.

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assumption that profits are never spent by the recipients. It is not sufficient to show that wages are likely to be respent more rapidly than profits. Unless all of an increase of wages is a net addition to demand, industry as a whole can recover from the enhancement of buying power only part of its added costs; the balance must come out of profits. This is of no great importance in a period of expansion and rising profits, but in a period when the problem is to maintain investment, a wage increase forced by governmental or trade union action must be counted a retarding factor.

COMMUNICATIONS

Rebuttal to Professor Crum and Mr. Musgrave

In the September, 1939, issue of this *Review* appeared two articles in reply to my article in the March, 1939, issue entitled, "The Double Taxation of Savings."[1] One of these replies was by Professor W. L. Crum of Harvard University and was entitled, "On the Alleged Double Taxation of Savings."[2] The other was by Mr. Richard A. Musgrave, also of Harvard, and was entitled, "A Further Note on the Double Taxation of Savings."[3]

In my article, as elsewhere, I have contended, as did John Stuart Mill, Alfred Marshall, A. C. Pigou, Einaudi, and others, that to tax savings and then to tax the fruit of those savings is virtually to tax the same thing twice. It is taxing not only the fruit but also the tree which bears the fruit, the tree being of no value except as it bears the fruit.

For purposes of illustration the simplest case is that type of saving which is invested in a perpetual annuity. Under an income tax which treats savings as income, a 50 per cent tax on the saving reduces by 50 per cent the subsequent fruit of that saving and then in the subsequent years, it takes 50 per cent of the remaining fruit, making actually 75 per cent in all, instead of the nominal 50 per cent. In like manner, a tax of nominally 10 per cent amounts actually to a 19 per cent tax, and a nominal 1 per cent tax comes to a shade under 2 per cent, whereas, in the case of a person who neither saves nor dissaves, 50 per cent is actually 50 per cent, 10 per cent is 10 per cent and 1 per cent is 1 per cent.

As to the strict mathematics of this, including less simple cases, these have been covered in the earlier writings to which I referred the reader in the article criticized by Professor Crum and Mr. Musgrave.

In the March, 1939, article I also suggested, as a merely incidental phenomenon, that a saver might be tempted to migrate from a state where spendings-plus-savings are taxed to a state where only spendings are taxed; and that a dissaver might be tempted to migrate in the opposite direction: from a state where his actual spendings are taxed to a state where spendings-minus-dissavings are taxed; and that people who neither save nor dissave would have no preference as between the two states, other things being equal.

But my basic comparison was between the saver and dissaver in one and the same jurisdiction—a jurisdiction which taxes spendings-plus-savings; whereas Mr. Crum's comparison is basically (though with variations) between savers in one state and savers in another state, the two states having equal budgets, equal savings, and equal spendings, but one of the states taxing only spendings and the other taxing spendings-plus-savings (with almost no men-

[1] *Am. Econ. Rev.*, vol. xxix, March, 1939, pp. 16-33.

[2] *Ibid.*, Sept., 1939, pp. 538-48.

[3] *Ibid.*, Sept., 1939, pp. 549-50.

tion of dissavings). And Crum reaches the conclusion (to which I offer no objection) that the taxing authority which did not tax savings would, in order to meet its budget, have to make up for the exemption of those savings.

Even if we concede this and other conclusions of Mr. Crum (under his very unrealistic assumptions), there is practically nothing in his article on the question supposed to be at issue—the existence of double taxation when savings are taxed.

In fact, if Professor Crum's article did not purport to have reference to mine, I could criticize it very little. And if his references to mine were entirely correct, I would even say his article *confirmed* mine. For the only part of his discussion which is very germane is included in the three pages, 545-47, where he shows correctly that the *savers* in B-land (where savings are exempt) do have an advantage over the *savers* in A-land, where savings are taxed, and that national saving might even be "encouraged" by the B tax system.

Yet he seems to think that his comparisons disprove double taxation. On page 544 he asks: "Where then is B's advantage over A? And is A a victim of 'double' taxation?" And he repeats these questions on page 547.

He evidently asks these rhetorical questions because his numerical illustration shows that the *average* A (inhabitant of the state where savings are taxed) and the *average* B (inhabitant of the state where savings are not taxed) will fare alike—that the *average* A has no "advantage" such as Professor Crum thinks I claimed. And he is, I agree, correct—at least under his assumptions.

He quotes my assertion that "There is mathematical proof—proof that if savings are taxed as income and later the income from these savings is also taxed, there will result a subtle form of 'double taxation' "; but in denying that I had proved this (pp. 538 and 547), he apparently had sole reference to the arithmetical illustrations in the March, 1939, article and did not notice the footnote explaining that "Proof of double taxation was offered in *The Nature of Capital and Income,* especially in graphic form, and again in *Econometrica* (January, 1937, 'Income in Theory and Income Taxation in Practice'), in algebraic form" and that I merely added, "The present article [March, 1939] furnishes some new arithmetical illustrations."

There are several other respects in which a reader of Professor Crum's article will fail to get a true picture of the proposals which he criticizes.

It would seem that (if he had noticed the fact) he would have told his readers that I do favor quite strongly one form of double taxation, namely, the taxation of big accumulations at the death of the accumulator plus the taxation, later, of the income from those accumulations as spent by the heirs.

I said: "So far as taxation is concerned, the best method for preventing an undemocratic and hereditary plutocracy, I believe, would be through estate and inheritance taxes. An inheritance tax is a tax frankly on capital value, which means a pre-tax on future income and so implies a second tax when that future income arrives. This species of tax on capital, coming at the time when the property passes at death, seems to the present writer more easily justified than any other tax on capital in an ostensible income tax" (p. 32).

On the question of expediency as between the two sorts of income tax, the main comparison must, of course, be between the two regimes—a spendings tax vs. a spendings-plus-savings tax—in one and the same jurisdiction, say the United States, regardless of the incidental question of migration.

Professor Crum's comments apply to a comparison between the two jurisdictions, especially when he complains that "Z [his chief saver in the jurisdiction which exempts savings] waxes ever fatter," and then asks, "What are the consequences to Z? First is the political fact that, even if X and Y—the majority of the population in a nation [B] which presumably professes to enjoy democratic government—consented to the arrangement in Year O and for some years thereafter, the worm would turn; and Z would sooner or later be taxed in deadly earnest on his 'extra' savings or the 'yield' thereof or both" (p. 547).

But, under the regime proposed by me, the savings *would* be taxed—as an estate. And (with realistic assumptions) the tax revenue would be greater than under the regime favored by Crum.

This last consideration (of greater revenue) I did not discuss in the March 1939 article, and it needs only a passing reference here.[4]

The important element in a nation's savings or capital-increase comes with new inventions. Such examples of capital-increases grow fast from year to year like compound interest, that is, *if they are tax-exempt.* A tax on the capital-increases would forestall this rapid growth. Thus, one important consequence of this spendings-plus-savings tax is that it produces far less revenue than would the spendings tax, especially under conditions resembling the actual world more closely than the conditions assumed in Professor Crum's highly hypothetical communities.

One of Professor Crum's most theoretical and least realistic assumptions is a 5 per cent interest and capital-increase rate uniform for all individuals and for the government, whereas the facts of life are far different. In real life the rate of interest at which the government can borrow is *below* other rates and the rate at which private initiative increases our national wealth is, in those cases which contribute most, far *above* the rate under government management. Under these real life conditions the revenue received by the government from taxing savings would *not* be used as productively as it would be if left in private hands. Our capital equipment has been built largely from new inventions, privately developed, with annual increments of capital value far in excess of the market rate of interest; while our governmental investments have usually been wasteful.

As I go over Mr. Crum's article for the third time, I find that my only really serious dissent from his views, as I understand them, is felt when he pictures the savers' savings as being made at the expense of non-savers.

My own picture is altogether different. I regard the typical capital-creator as one who develops new inventions like the railway, automobile, radio and movie, which are typically far more beneficial to others than they are to those who, through developing them, become the owners of huge aggregations of capital in the form of productive plants. These accumulators—the Vander-

[4] For a discussion of this point, see "A Second Reason for Not Taxing Savings," *Taxes,* Aug., 1941.

bilts, Rockefellers, Fords—seem to me, in the first generation, to function more as national benefactors than as beneficiaries. Only when, as often happens in subsequent generations, the heirs become primarily spenders, instead of savers, do I think of the owners as self-indulgent or parasitical. Accordingly, I would encourage savings and discourage spendings, whereas the tax on savings doubly taxes the saver and doubly exempts the spender, thus going directly contrary, in both cases, to sound public policy.[5]

But, as to any substantial issue between Crum's article and mine, I can find no such issue, only an "alleged" issue.

Between Mr. Musgrave and myself there is more of an issue, though not very serious. Mr. Musgrave says: "The point of issue is whether the general income tax [*i.e.*, one on spendings-plus-savings] involves a hidden discrimination against income from saving or whether, on the contrary, Professor Fisher's spending tax results in an analogous discrimination in favor of saved incomes" (p. 549). And he concludes that: "From a logical point of view Professor Fisher's statement that the income tax discriminates against savings is no more valid than the opposite contention that the spending tax discriminates against spending" (p. 550).

This, it seems to me, is carrying relativity too far. Or is it not far enough? It is true that if any tax system A hits the saver harder, *relatively* to the spender, than does tax system B, it logically follows that tax system B must hit the spender harder *relatively* to the saver than does tax system A. That is self-evident enough. But it misses the point. The comparison, to be meaningful, must not be merely between two things. Both things must be relative to a third as a common measure. That third thing is discounting or capitalization. It is based on the fact that the tree derives its value from the fruit.

At the very start Mr. Musgrave seems to me to go off the track when he says: "Notwithstanding the merits of Professor Fisher's income concept [*i.e.*, yield (which is equal to spendings)] for purposes of general theory, we find no necessity to use the same income-concept for all purposes" (p. 550).

I am quite ready to agree that there is no such necessity "for *all* purposes." But I cannot agree when Mr. Musgrave concludes that the yield concept is not germane to the purpose of taxing income.

In at least two important respects concerning "general theory," the yield concept is more applicable to income taxation than is any other income concept: it would make the tax on income a tax on *real* income; consumption, and the capitalization or discount principle, would make it in tune with the principle underlying market values.

To compare two streams of income (in the yield sense), we discount them. And to compare two streams of taxes paid out of those two streams of income, we also discount. Such comparison of the two income streams is exemplified by the market-values of the income-bearers, such as shares of stock; and comparison of the two tax-streams is exemplified when the taxes are supposed to be "compounded" for or prepaid in spot cash. These com-

[5] This subject and others related to it are elaborated in "A Second Reason for Not Taxing Savings," *Taxes*, Aug., 1941; they will be treated mathematically, in the January *Econometrica*; and the whole problem of income tax reform will be the subject of a forthcoming book by myself.

parisons—between the incomes taxed and between the taxes thereon—will run parallel if we use the yield-concept of income (which I prefer for tax purposes). But they do not run parallel if we use yield-plus-savings concept of income (which Mr. Musgrave prefers for tax purposes). For a tax on the savings ingredient (or capital-increase) *distorts* the parallelism. When such capital-increase is taxed (or capital-decrease is deducted), a discount comparison between the taxes is entirely out of tune with the discount comparison between the incomes.

For instance, consider two perpetual annuities, *m* and *n*, each earning at first $5.00 a year and each having a market value of $100, the "basis" being 5 per cent. Suppose that in the case of *m* there are no savings, but that in the case of *n* the first $5.00 earned is saved and reinvested on the same (5 per cent) basis, adding 25 cents a year to the income and, in effect, transforming this *n* annuity into an annuity, not of $5.00 a year, but of $5.25 a year, and not beginning at once like annuity *m* but being deferred one year.

Thus transformed, annuity *n* actually *yields* nothing the first year though it *earns* $5.00. Its market value is still $100[6]; for the market value is always discounted *yield,* not discounted *earnings.*

Now suppose a 20 per cent tax on the two incomes, *m* and *n*. This would, from the start, take $1.00 a year out of the unchanged annuity *m* (of $5.00 a year). The present value of said $1.00 perpetually is $20. That is, this $20 could theoretically be paid in spot cash in order to "compound" for the $1.00 a year.

But as to *n*—which has been transformed (by saving $5.00 the first year) into an annuity of $5.25 a year beginning one year hence—the 20 per cent tax will be different, according to which income concept is used for the tax base. That is, if "income" is taken to mean *yield,* the 20 per cent tax is zero the first year and $1.05 every year after, and this series has a present worth of $20.[7] Thus both annuities are worth $100 and both tax series are worth $20, or 20 per cent of the original $100 market values. These two values and the two taxes run parallel; whereas, no such parallelism applies if the taxable "income" is taken to mean "earnings" so as to include the $5.00 earned the first year but not spent. If that $5.00 is taxed the first year, at 20 per cent, $1.00 is taken, leaving $4.00 out of the $5.00 of savings, so that a year hence the capital is $104. This will thereafter yield $5.20 a year. A 20 per cent tax on this is $1.04 a year in perpetuity. Thus, the present value of the whole tax series, including the $1.00 the first year, is not $20 but $21.80, which is *more* than 20 per cent of the original $100 market value.

There is therefore a "discrimination" measured by $1.80 against the saver. Though his property has the same value ($100) as the spender's, his tax burden is heavier *measured in present value,* which is the only available measure when time shapes differ.

This same principle applies in the case of investment followed by disinvest-

[6] One way to compute the market value of *n* on a 5 per cent basis is in two steps as follows: the income of $5.25 a year, beginning one year hence, is 5 per cent on a capital value of $105 one year hence, which $105 is, in turn, discounted, $100 today.

[7] *I.e.*, $21 one year hence, worth $20 today.

ment and the spending of the saved sum, say two years later. If that sum is taxed when received, there is double taxation. It is not a mere "difference in timing" as Mr. Musgrave seems to think. Mr. Musgrave himself virtually concedes more than a difference in timing when he uses the words "bear harder" (p. 550). He says: "If the original income is invested, a given percentage tax on income will, over the period from income-receipt to disinvestment, *bear harder* (italics mine) on the 'saver' than a tax payable at the time of disinvestment, yielding the same amount. The cause of the excess burden on the saver lies in his loss of interest . . ." (p. 550).

Thus there is always *some* double taxation whether the consumption is put off two years, fifteen years, or forever. In all cases there is a twofold tax, namely, a tax on interest, the fruit of savings, and a tax on the discounted value of the said interest.

When, therefore, Mr. Musgrave says "the original income [saved] is thus taxed but once, whether or not consumption has been delayed" (p. 549), he overlooks some of the rôle played by interest. In the example he has chosen (of a two-year interval), this oversight is not serious. With a two-year interval only $9.29 out of the original $100 saved is taxed twice, this $9.29 being the discounted value of the two years' interest items of $5.00 each. The remaining $90.71 "is taxed but once." But the interest becomes a more and more serious factor the longer "consumption has been delayed."

It is entirely misleading to contrast as equivalents the $100 saved today and the $100 spent (plus interest) two years later. These two $100's are *equal* numerically but by no means *equivalent* at any given instant. The equivalent (at the start) of the later $100 is only $90.71 out of the earlier $100.

Like Mr. Crum and a number of other writers, Mr. Musgrave takes for granted that "A given percentage tax on all income [in which he includes savings] will yield more revenue . . . than a similar percentage tax on incomes after the deduction of savings" (p. 549). He says that, if savings are included in taxable income, we have "a broader income tax base" (p. 549) and that, if savings are excluded, the "range of income tax brackets would be narrowed enormously" (p. 550).

Evidently he has not fully worked this out with figures. For, in the end, the exact opposite is typically true. Paradoxically more taxes can, in typical cases of new inventions, be obtained from the "part" excluding savings than from the "whole" including savings.

One example must suffice here. Suppose someone like Henry Ford was worth $1,000 in 1900 and increased his net worth by 40 per cent per annum until 1940. He would then be worth $700,500,000.

Suppose this growth occurred without any tax on his capital-increase. Then contrast the results, as given above, with what would happen under a tax on capital-increase such as Mr. Musgrave favors. Let that tax be only 20 per cent. The capital in 1940 would then be not $700,500,000 but only $66,500,000. That is, the 20 per cent tax would destroy over 90 per cent of the capital!

Moreover, the tax revenue for the 40 years would be only $16,600,000

whereas, if there had been no such tax killing the goose which ought to lay the golden egg, a tax *of merely 3 per cent* would, at the end, mean $21,000,000.

Mr. Musgrave alludes to "a growing group of economists" (p. 550) favoring, so he seems to think, a general tax on savings. If there be such a group, it is probably owing to a misunderstanding of Keynes (who is now, on the contrary, proposing compulsory savings), and the group does not seem likely to keep on "growing." On the contrary, the spendings and destructions of capital, public and private, in the past decade, must (I, for one, feel sure) soon bring about a reaction toward a renewed and keener appreciation of the value of normal savings.

The idea stressed by Musgrave that "saving" does not necessarily imply "investment" is important under certain circumstances, notably during deflation when there is hoarding or during the New-Deal hounding of business. But these circumstances do not invalidate the fundamental double taxation which is the target at which both Crum and Musgrave aimed. Nor do I see any ground for fearing that the exemption of savings would encourage hoarding *more* than investing!

I freely admit that "policy considerations" (p. 549) may sometimes afford extenuation or even justification for double taxation. But to justify double taxation (when it can be justified) is quite different from contending, as Mr. Musgrave does, that "no double taxation prevails" (p. 549).

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Proposal for Cushioning the Transition to a Peacetime Economy

I

In considering the means for preventing a possible depression in the post-war period, it is useful to distinguish three different types of causal factors which may give rise to the unemployment of human and material resources. These are: (1) Sudden cessation of the demand for military products; (2) dislocation of trade caused directly and indirectly by the war, such as the loss of foreign markets, the distortion or restriction of international capital movements, etc.; (3) secular, political, or institutional factors which were present in the economy before the war and which re-assert themselves (in more or less modified form) after its cessation.

These three classes of potential causes of post-war unemployment are, of course, closely interrelated, each tending to reinforce the others. The advantage of considering them separately lies in the fact that a remedy appropriate to one of them will not necessarily be appropriate to the others.

Proposals so far advanced for dealing with the post-war problem for the most part envisage large scale public works of various kinds, the expansion of social security programs, governmental action looking toward the revival of international trade, etc. These programs, necessary and proper though they

may be, are not directed specifically at the unemployment springing immediately from the cessation of the war. They expressly or implicitly assume that the other elements making for depression in the post-war world; *i.e.*, those covered by (2) and (3) above, are more fundamental than this factor. This may very well be true. Yet the prevention or mitigation of unemployment resulting from the disappearance of military demand as such is highly important, not only for its own sake but also, as already suggested, because such unemployment would tend to intensify other unfavorable post-war influences. It is this—the transition problem proper—to which this paper is devoted.

The problem divides itself into two parts: (1) the transfer of resources from the production of war goods to the production of peace goods and (2) the "secondary deflation" effects following upon the interruption to full employment. In view of the memory of the extraordinarily deep depression which preceded the war, cumulative "secondary" effects, induced by hoarding and retrenchment, are likely to prove far more serious than the mere problem of physical readjustment and transfer.[1]

One method which suggests itself for heading off unemployment in the immediate post-war period is the accumulation, during the war, of *a backlog of orders for civilian goods,* especially for the durable consumers' goods the production of which was most interfered with by the war. Not only would such a backlog provide immediate employment in the industries concerned but, perhaps even more important, it would help to maintain "confidence" in other areas of the economy.

The paragraphs that follow outline a proposal which, in the writer's opinion, offers a distinct possibility for building up the type of backlog described.

II

The central objective of the plan is to build up a large volume of private savings which may be counted upon to be spent shortly after the cessation of hostilities and which will be accumulated for that special purpose. This is to be accomplished through the issuance by the United States Treasury of a new type of bond.[2] This bond (1) shall bear a high rate of interest, perhaps between 4 and 5 per cent; (2) shall be payable only to recognized sellers of specified goods in full or partial settlement of post-war purchases made by the bondholders.

The commodities in payment of which the bonds will be honored will include all the more important durable consumers' goods: farm machinery and equipment; residential or business buildings; and "capital goods" in general. The articles purchased must be new, not second-hand.

[1] In a historical study of the relation of war to the business cycle, it was found that "When the war is terminated, a recession occurs in the belligerent countries. . . . [This] is soon followed by revival and prosperity." E. M. Bernstein, "War and Business Cycles," *Am. Econ. Rev.*, vol. xxx, Sept., 1940, pp. 530-31. For the reasons stated above and also because of the rigidity existing in today's economic structure, there is much more likelihood that a recession after this war will develop into a major depression than was the case in past wars.

[2] If it is felt that the multiplicity of types of bonds may be confusing to the public, the instruments could be called Merchandise Saving Certificates, or by some similar name.

The bonds, which may be transferable, shall have no maturity date but shall be payable on or after a day proclaimed in advance by the President. This date will be the earliest on which, in the President's judgment, substantial deliveries of one or more of the specified goods can be begun. (For convenience, this date will be referred to below as X Day.) On or after X Day bondholders may receive payment by endorsing their bonds in full or partial payment of a new purchase of any of the specified goods, but in no other way. Purchases on which the bonds will constitute at least a one-third payment shall be exempt from all war excise taxes in force at the time of purchase. (Manufacturers would obtain refund of the tax by furnishing proof of sale of the article to a retail customer.)

In order to discourage retention of the bonds after X Day all interest and tax exemption shall cease six months after X Day (or as of the date—subsequent to X Day—of endorsement of any bond to a dealer, whichever is earlier). However, in view of the possibility of a situation arising (as it did in 1919) in which demand in a great number of lines may outrun supply, this provision should be flexible. It could perhaps give the President a range of time, such as between three months and two years after X Day within which interest on the bonds and tax exemption might be discontinued.

Upon turning in a bond to a dealer the customer will be entitled to receive credit for all interest due on the bond. In order to facilitate the transaction each bond will carry a table showing the amount of interest due after stated intervals. In cashing the bonds, dealers will be required to furnish proof of sale of a new article and of the date of the transaction. The bonds will be available in denominations as low as $25, with installment purchases made possible through stamp books.

Any holder may receive cash for his bond at any time before the day of the President's proclamation (see below), but if he avails himself of this privilege shall forfeit all interest.[3] The privilege of converting bonds into cash shall end on the date when the President proclaims X Day (which date will, of course, precede X Day).[4] However, to take care of cases where a small surplus is left after any desired article is paid for in full, bonds or stamps up to $25 value in such cases will be redeemed in cash after X Day.

The Treasury shall have the right to suspend (and resume) the sale of the bonds at any time, and to call in outstanding bonds after two years subsequent to the date the first bonds were issued.

III

It will be seen that the above scheme, if successfully carried through, will serve a double purpose: (1) it will absorb purchasing power during the war; (2) at the end of the war it will *convert the purchasing power into actual purchases.*

It is the latter characteristic of the plan which distinguishes it from pro-

[3] An exception to this penalty would be made in case of the death of the bondholder.

[4] Thus between the day of the President's proclamation and X Day, a period which might perhaps be 90 days, the bondholders' funds would be "frozen," being repayable neither in cash nor in goods.

posals which look forward merely to making purchasing power *available* in the post-war period without guaranteeing its actual use in creating demand. Furthermore, it should be noted that the plan will create a direct demand for employment in that sector of the economy where employment will be most urgently needed, namely, in the so-called "hard" goods industries.[5]

It may be argued here that these purposes would be accomplished as well by the "Keynes plan" of compulsory saving as by the scheme presented above. Since the "forced savings" would in general be disbursed to individuals in the lower income groups with a high propensity to consume, they would in all likelihood soon be spent. This argument deserves some consideration.

Let us assume first that the savings are paid out as a lump sum. If so, there is no presumption whatever that the use of the money will conform to the usual income expenditure pattern of the individual. On the contrary, these extraordinary receipts would probably be regarded as capital gains. Much of the money would be saved and the fraction spent on consumption would be smaller than the corresponding fraction out of ordinary income.

Now let us suppose that the payment of the savings money is spread out in weekly payments over a period of time. If the recipient is working, this money will constitute an addition to his income. But it would be a mistake to apply the individual's ordinary marginal propensity to consume to this added income, for it is purely temporary and the recipient knows that it is. It is altogether reasonable to assume that he will spend a smaller fraction of it than if he considered it to be permanent.

Moreover, we know that, in any event, not all the "forced savings" receipts, nor even a large part of them, will be spent on durable consumers' goods. This is true *a fortiori* if the individual is unemployed. Yet it is precisely in the "hard" goods industries that unemployment will make itself felt most quickly and severely, with deleterious cumulative effects on the rest of the economy.

It should be clear, therefore, that as far as assuring expenditure of money saved during the emergency is concerned, the Keynes plan does not take the place of the scheme here presented. Much of the above argument could be repeated with respect to unemployment benefits, separation wages and the like. Furthermore, the experience of the depression has amply demonstrated that the "secondary" effects of such expenditures cannot be compared to the like effects of the expenditure of wages earned in private industry.[6]

The appeal to the American public to invest in the bonds would be based

[5] A scheme under which the government borrows money on condition that the repaid funds must be spent only in a specified way may seem fantastically new, but has a precedent. This precedent is to be found in the German government's *Volkswagen* campaign under which the Labor Front collected weekly contributions from German citizens as payments on popular-priced automobiles which were to be delivered at some time in the future.

Another analogue is the provision in the latest British tax bill whereby a certain percentage of the excess profits tax will be returned to the taxpayer after the war on condition that he spend it for reconstruction purposes. *Cf. The Economist*, April 12, 1941, p. 475.

[6] These facts by themselves are of course no argument against these schemes as anti-inflationary devices.

primarily on grounds of self-interest. The greatest incentives that would be counted on to sell the bonds would be (1) the high rate of return, and (2) exemption from the high war excise taxes.

Furthermore, purchase of the bonds could be held out as a plan for acquiring some definite article in which the individual is interested. It would be a way of "saving up" to get a car, or a washer, or a refrigerator. People who will not save "in general" may, with the proper approach, be induced to save for a special purpose.[7] This appeal should be especially strong at a time when most durable consumer goods are scarce. Finally, with a little imagination, a powerful appeal to buy the bonds can be based on the essential purpose of the plan, namely, to maintain employment after the war.

The cost of the plan would be very moderate. If the interest rate is 5 per cent and the amount of bonds sold (uniformly) over a three-year period, and outstanding at the end of that time, is 10 billion dollars, the *gross* additional cost to the Treasury would be in the neighborhood of 400 million dollars.[8] The *net* cost will be much smaller because manifestly the higher national income brought about by the expenditure of the backlog[9] should greatly increase tax recoveries in the immediate post-war period.

IV

It is obvious that the success or failure of the scheme here presented depends almost entirely on whether the special kind of bond contemplated will find acceptance with the public. There appear to be no other problems, administrative or otherwise, of a major character.[10] It is therefore necessary to consider the factors which may militate against the sale of the bonds.

The first and perhaps most important of these is the natural reluctance of people to accept a limitation in advance on the manner in which they may spend their savings. The question may be asked: Why should people commit themselves to buy a durable good after the war when they know they may be out of work and lack the ordinary necessities of life? In answer to this question it may be admitted at once that the bonds will not compete—and are not intended to compete—with savings accumulated against unforeseen emergencies. They will appeal only to those who deliberately intend to use part of their income (or accumulated savings for that matter), to acquire some durable consumers' good.

These will include:

(1) those who would like to buy the commodity now but cannot do so because it is not available;

(2) those who have already made provision against a "rainy day" or

[7] This is borne out by the popularity of "Christmas Savings Clubs."

[8] This is based on an assumed cost to the Treasury of between 2 per cent and 2½ per cent for money from Defense Saving Bonds.

[9] The backlog, it should be noted, may be substantially greater than the amount of bonds outstanding, since many of the bonds will be used only as down-payments.

[10] Of course, the government will be faced with a major refinancing operation at the time of the payment of the bonds, but there will be no net increase in its debt.

have sufficient earning power to do so concurrently with investing in the bonds;

(3) those who had sufficient income to be able to afford the particular commodity (say, an automobile) before the war and make the not unreasonable assumption that they will be able to afford it afterward. (In view of the fact that the great majority of those now employed were employed before the war, this should be a very large category.)

Moreover, it should be remembered that the plan will offer the prospective bond purchaser the privilege of withdrawing his principal at any time.[11] This is a safety clause which should be very effective in overcoming sales resistance on this score.

The second factor which may impede the sale of the bonds is the uncertainty of the time of repayment. Many individuals may be willing to save for a year or two years with an intended purchase in mind, but may not be willing to make the time of their purchase contingent upon some eventuality the occurrence of which lies in the indefinite future. This is a valid objection, but it is offset, at least in part, by two considerations.

In the first place, there is the cancellation privilege mentioned above. A person may put his money into the bonds on the assumption that the war will be over in, say, two years. He need not hesitate to do this because if, after that time, the end is not yet in sight, he will be able to withdraw his money.

Secondly, most people who wish to acquire durable consumers' goods will not find it possible to satisfy their desires while the emergency lasts anyway. Hence, the actual choice that will confront them will be between saving their money until after the war and spending it on *other* goods or services now. If they decide to save, with the object of buying some durable after the war, they will be no worse off if they save by investing in the bonds than if they saved in any other form.

The enormous benefits to be gained from the success of the plan, coupled with the fact that practically nothing would be lost in the event of failure, argue strongly for making the experiment.

Alex. Rosenson

Washington, D.C.

Population Growth, Investment, and Economic Recovery

It has frequently been stated that the declining rate of population growth was one of the major contributing causes for the failure of the American economy to recover fully from the depression of the 1930's.[1] Since this view has not gone entirely unchallenged, it seems appropriate to examine a little more fully the effects upon the economy of a slowing down of the rate of population increase during a period of general underemployment. It is my contention that, during such a period, there is no important demonstrable

[11] Up to the time of the President's proclamation.

[1] For an expression of this view, see especially A. H. Hansen, "Economic Progress and Declining Population Growth," *Am. Econ. Rev.*, vol. xxix, March, 1939, pp. 1-15.

connection between the rate of population growth and the level of employment.

Population growth, it is claimed, might affect investment, and thus the level of employment, in two ways. It could increase the demand for investment either for the "widening of capital" or for the "deepening of capital." By definition, the "widening of capital" means investment to supply tools and equipment for additional workers who are increasing the total output of finished goods. Unless there first occur additional output and additional employment, there will be no demand for investment for the "widening of capital." The claim, therefore, that an increasing rate of population growth increases the demand for investment for this purpose involves the tacit assumption that employment has increased. Since the problem is to demonstrate that an increasing rate of population growth will raise the level of employment, we cannot make such an assumption.

The effect of population on the "deepening of capital" is a result of the rôle that the rate of population growth plays in determining the composition of the flow of final goods. The argument seems to be that a high birth rate so affects the individual family's pattern of expenditure that more is spent on goods requiring much investment. Among the poor, the group numerically largest and therefore the group in which a changing birth rate would have the most effect, there is an income level so low that almost the entire income must be spent on food, clothing, and shelter.[2] One more mouth to feed means just that and may not call for additional housing facilities and additional food but merely more crowding in the present rooms and more division of the present amount of food. Certainly there is no vast amount of income being spent in non-investment utilizing fields such as personal services which could be shifted to housing. This income group, then, will not by its consumption provide any great opportunities for investment because of a rising birth rate. In the wealthy population strata, the amount of automatic saving is sufficiently great, and the number of rich performing such saving sufficiently small, that the practical importance of any change in the birth rate of this group is likely to be rather negligible. In the middle-income group it is true that an increase in the birth rate will cause an actual change in expenditure away from other types of goods to food, clothing, and shelter. If these three are "the most highly capitalized goods in the economy,"[3] then it necessarily follows that there will be an increase in investment. We may, however, well question the actual importance of this factor during a depression period. An increase in the demand for housing might, in such a period, more largely take up the slack of vacant housing facilities rather than produce new investment and new construction. In addition there may be an appreciable loss of investment because of the shift of demand. For example, the family which is renting a larger house may be forced to retain its old automobile a year or two longer, or refrain from purchasing a second car. The production of automobiles is also capital using,

[2] At least this is likely to be the case during a period of general underemployment and certainly seems to have been true during the decade of the 1930's which we are considering.

[3] Both Hansen and Keynes feel this to be true of housing accommodations and agricultural products. See A. R. Sweezy, "Round Table on Population Problems," *Am. Econ. Rev.*, Suppl., vol. xxx, March, 1940, p. 397.

perhaps as much so as the production of housing accommodations. Thus the shift in consumer demand might cause no net increment in the demand for investment.

In short, it is impossible to answer in advance whether an increased birth rate would occasion a greater demand for investment to be used in the "deepening process" of capital formation. The discussion of the effect on the "deepening process" has been limited, heretofore, to an increasing rate of population growth occasioned by a higher birth rate. More definite comments can be made about an increment caused by immigration. An influx of immigrants can have no influence whatsoever on the "deepening of capital" resulting from changes in the character of the output as a whole since this group of the population does not shift its demand from one type of product to another type requiring more investment. It cannot *shift* its demand because the group had no effective demand before it entered the economy.[4] Thus immigration cannot increase the demand for investment through the "deepening of capital" process.

Much of the recent discussion of the secular stagnation hypothesis has considered the effect of the rate of population growth directly upon employment rather than upon investment. In an analysis of this effect, it is essential that confusion between total population and total *employed* population be avoided. An initial decline in total employed population will, through the operation of the multiplier effect, cause a further decrease in employment. This would be of relevance to an evaluation of the effects of a declining rate of population growth only if *total* population is the *working* population.. This, however, would mean the absence of unemployment and is, therefore, of no interest to the problem under consideration, the effects of a declining rate of population growth in a depression period.

Some of the writers on this subject have considered it obvious that an increasing rate of population growth "stirs up building activity" and increases the demand for consumers' goods.[5] Unless there is an increase in purchasing power first, there can be no increase in demand, only a shift of demand which may or may not be advantageous to employment. An increase in effective demand can result prior to new investment from three sources. The new population may obtain an income as a result of securing employment. This, of course, would increase demand but again the problem is to explain how they got jobs. The new population may, secondly, be granted governmental relief and so obtain purchasing power. Obviously this might increase effective demand, but it is only saying that the government may be able to stimulate employment by deficit-spending. It is the spending that matters in this case, not the population increase. The third possible source from which the increment of population might obtain purchasing power is from private charity. This may be a diversion of expenditure with the donors foregoing their own consumption in order to give to the new population, or forcing the prior recipients of their charity to divide the proceeds with the new population.

[4] Except, of course, for products previously exported.

[5] A. Lösch, "Population Cycles as a Cause of Business Cycles," *Quart. Jour. of Econ.*, Aug., 1937, p. 658.

The effect in both cases is indeterminate depending upon the actual shift of demand that occurs. Those supporting the new population may, however, do so by a reduction of their savings. This would raise the level of employment, but the population increase is only an initiating force causing charity to increase. If some other factor caused donors to be more charitable, the effect would be the same.

There is, however, another possibility which must be considered. If, because of an increasing rate of population growth, expectations of entrepreneurs change so that they now believe certain investments to be profitable, whereas before the population increase such investments were not deemed profitable, then obviously investment and employment will increase. One of the important determinants of the marginal efficiency of capital is the state of expectations of entrepreneurs. If entrepreneurs become more optimistic, then investment must increase; and, if an increasing rate of population growth makes entrepreneurs more optimistic, then an increasing rate is beneficial to employment.

It is probably true that, in a boom period of full employment, rapid expansion, and an increasing population, a sudden decrease in the rate of population growth would tend to make investors more cautious. Whether an increasing rate of growth would have beneficial psychological effects during periods of depression is another matter. Popular opinion seems to hold that an increasing rate of population growth will cause a larger absolute level of unemployment. There is during every depression a certain public clamor to restrict immigration and even to further emigration from the country. At the thought of additional refugees coming into this land, the cry arises that the refugees would take jobs away from Americans. Such a popular reaction to an increasing rate of population growth might influence entrepreneurs to be pessimistically inclined rather than optimistic as a result of the increase. Investors may feel that such an increase will cause more absolute unemployment and economic hardship in the country so that investment prospects are less profitable rather than more profitable.

The conclusion seems to follow that an increasing rate of population growth might actually raise the level of unemployment during a period of depression. This, at least, seems a truer picture of the situation than Professor Hansen's declaration that the declining rate of population growth was an independent, contributing factor for "sick recoveries which die in their infancy and depressions which feed on themselves" such as we experienced in the 1930's.

Martin M. Rosen

Washington, D.C.

Who Pays for the Gold?

A correspondent sends in the following colloquy[1] between Representative F. C. Smith and the Under Secretary of the Treasury, thinking that such a

[1] *Congressional Record,* daily edition, Nov. 25, 1941, pp. 9343-44. Also *Price Control Bill: hearings, committee on banking and currency, 77th Cong., 1st sess.;* Part 2, *H. R. 5479,* pp. 1152-53.

brilliant piece of economic analysis deserves a place in the *Review*. Mr. Smith is speaking:

"Up to June 30, 1940, the Treasury had acquired, nearly all from foreigners, roundly $13,000,000,000 of gold at $35 an ounce. By August 6, 1941 it was carrying on its books approximately $16,000,000,000 worth of gold at $35 an ounce, which represented the gold stock that was added to the amount held at the time of gold debasement, January 31, 1934.

"What did the Treasury use to pay for this gold? In section 8 of the Gold Reserve act is prescribed what shall be used to pay for it. It reads in part as follows:

" 'With the approval of the President, the Secretary of the Treasury may purchase gold in any amounts, at home or abroad, with any direct obligations, coin, or currency of the United States authorized by law, or with any funds in the Treasury not otherwise appropriated.'

"This is plain. It means the Treasury shall use money from its ordinary receipts, taxes, customs, and so forth, or direct Government obligations to pay for the gold it acquires.

"But does it pay for the gold it acquires with any of these payment media? The following colloquy took place between myself and Secretary of the Treasury, Mr. Morgenthau, at the hearings on the price control bill (p. 1152). It will be noted that Under Secretary of the Treasury, Mr. Bell, answered most of my questions, but specifically at the request of Mr. Morgenthau. Also it will be seen at the end of the colloquy, as shown here, that Mr. Morgenthau fully subscribed to all Mr. Bell said. Therefore, the answers to my questions are those of Mr. Morgenthau, as well as of Mr. Bell.

" 'Mr. F. C. Smith. What do you use to pay for this gold?'

" 'Secretary Morgenthau. Could Mr. Bell go through the operation of going to the bank and everything else?'

" 'Under Secretary Bell. If a country imports gold into the United States it is presented to the assay office, we will say in New York, and the New York assay office gives the importer or the bank or whoever it might be, a check on the Treasury, what we call a gold-fund check, and that check is cashed just like any other Government check. It is deposited by the recipient in his bank and creates a deposit.

" 'Then, when that check goes around the circuit and comes into the Federal Reserve bank it is charged to our account. It depletes the Government's balance with the Federal Reserve banks, and then in turn we issue gold certificates against that gold, and receive a credit for the gold certificates with the Federal Reserve Banks, thereby replenishing our account.'

" 'Mr. F. C. Smith. And you pay for the gold with gold certificates?'

" 'Under Secretary Bell. The gold pays for itself; it is money; it is just an exchange of one form of money for another.'

" 'Mr. F. C. Smith. What does the law say on that? Section 8 of the Federal [Gold] Reserve act of 1934 reads: "With the approval of the President, the Secretary of the Treasury may purchase gold in any amount at home or abroad, with any direct obligations, coin, or currency of the United States, authorized by law." '

"'That is what the law prescribes you shall use to pay for this gold. What do you use?'

"'Under Secretary Bell. We use a Government check which is payable in any coin or currency. Anybody can present that check to the Treasurer of the United States or a Federal Reserve bank and he can get currency or silver coin.'

"'Mr. F. C. Smith. That is quite enigmatic. I am just wondering, is the cost of this gold reflected anywhere on the books of the Treasury? Does it enter into the debt?'

"'Under Secretary Bell. The gold does not enter into the debt. It enters into the monetary system, and is shown on the daily statement every day.'

"'Mr. F. C. Smith. Well, it does resolve itself into this, that you pay for it with a gold certificate.'

"'Under Secretary Bell. We get a credit for the gold certificate that we issue to the Federal Reserve bank, which is backed by the gold.'

"'Mr. F. C. Smith. But in the end, that is all that the United States Treasury gives out for this gold, is that true or not? Has it anything else to show that it paid for this gold except the gold certificate?'

"'Under Secretary Bell. That is all that we have to show, but the importer of gold has a bank credit to show, or bank deposit to show for it.'

"'Mr. F. C. Smith. But you have set up a deposit in the banks?'

"'Under Secretary Bell. That is right; it increases the deposits. Gold earmarked in favor of a foreign government does not, of course, enter our monetary system.'

"'Mr. F. C. Smith. But you printed the gold certificate, so you paid for the gold with fiat, did you not?'

"'Under Secretary Bell. No; a gold certificate backed by gold is not fiat currency, if I understand the word "fiat."'

"'Mr. F. C. Smith. But you bought the gold, purchased the gold, and now you set up a deposit in the banking system of this $15,000,000,000?'

"'Under Secretary Bell. In fact, that is what was done, you exchanged the gold for a deposit in the bank.'

"'Mr. F. C. Smith. Who exchanged the gold? The foreigner brought the gold in, and the Treasury issued a gold certificate and sent it to the Federal Reserve bank, which in turn set up a credit in some member bank in favor of the foreigner who sold the gold to the Treasury. Is not that the fact? It was given to the foreign merchant, or the foreign seller of the gold; that is the way the transaction operates?'

"'Under Secretary Bell. Let us say the Chase National Bank brought the gold from abroad. Now, they own the gold, and they sell it to the Treasury and we give them either currency or a check and that is the payment for it. If some foreign bank imports it, then they get a credit on the books of the Chase Bank which is their payment.'

"'Mr. F. C. Smith. When you issue currency that is a temporary proposition until you get the transaction adjusted, until you make your so-called gold-certificate deposit, and then your check transaction is canceled out. It is through the gold certificate that the credit in the bank is set up.'

" 'Under Secretary Bell. That replenishes our account and in fact the gold has paid for itself.'

" 'Mr. F. C. Smith. Would you say, Mr. Secretary, that the United States Government is carrying the cost of this gold?'

" 'Secretary Morgenthau. If you mean, are we carrying it on our books at cost, yes; but there is no cost to carry it.'

" 'Mr. F. C. Smith. Somebody paid for it; who paid for it?'

" 'Secretary Morgenthau. Mr. Bell tried awfully hard to explain it.' "

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TEMPORARY NATIONAL ECONOMIC COMMITTEE: REVIEWS OF MONOGRAPHS

No. 4: *Concentration and Composition of Individual Incomes, 1918-1937*. By Adolph J. Goldenthal. Pp. 112. 15c.

This monograph is a statistical study of the incomes in the upper brackets of the federal income tax returns in relation to the total number of income recipients and the total national income. It centers attention upon the concentration of income in the hands of the few and upon the changes in such concentration which took place in the two decades 1918-37. The measure of concentration is the proportion of the total national income which flows into the hands of the upper two per cent of the income recipients.

As measured in this study, concentration paradoxically increases with the increase in dispersion. The more the distribution of income fans out, the greater the likelihood of there being abnormally high incomes which, though small in number, comprise a considerable proportion of the total national income. It is largely because of this phenomenon that the monograph carries the conclusion that concentration of income increases with prosperity and high speculative activity and falls with depression.

The monograph contains many tables showing the shares in the total national income going to varying proportions of recipients in the upper income brackets. It also contains analyses of the composition of incomes in the higher brackets according to derivation.

Maurice Leven

Washington, D.C.

No. 8: *Toward More Housing*. By Peter A. Stone and R. Harold Denton. 1940. Pp. xxi, 223. 30c.

This monograph is concerned primarily with the provision of better housing for low-income groups and restoration of employment and business activity, and enthusiasm for these ends leads the authors into some rather indefensible positions. The assumptions underlying the argument and the statistical procedure are the features most likely to be questioned. The implied assumption that the building boom of the 1920's (1925-30) affords a norm is open to question since that volume of activity reflected an accumulated shortage, from the war years, federal restriction and the 1920-21 depression.

Implying that only new houses are suitable for those in need of better shelter, the monograph states, "There is a need particularly for the rehousing of 4,000,000 families which . . . must depend upon the use of second-hand houses when they have become depreciated to the point where they fall into the category of slums." About 85 per cent of this estimate of new building requirements represents units "in need of major repairs" as reported by the Real Property Inventories and which, if repaired, would be put "in reasonably good condition."

The report states that there is an annual need for at least 350,000 to 400,000 more units than are now being built in the price class below $4,000 "in order to meet the need of families with incomes below $2,000 and who . . . require new homes. . . ."

All will agree on the commendable goal of more good houses at low cost. It may be noted, however, that $4,000 is more than the average value of urban dwellings in 35 of the states even in 1930 before the decline in values that followed. The report errs in stating that only 19 per cent of new houses cost under $4,000, while 76 per cent of all families have incomes under $2,000 (Table VIII). This error results from assuming that the price distribution of new single-family dwellings accepted for insurance by the Federal Housing Administration is typical. These F.H.A. dwellings average far above the total for the country, being $5,000 in 1938, as compared with $3,450 for building permits—raised one-third for understatement and site. A recent Bureau of Labor Statistics study of residential permit valuations during 1936-38, in over 700 cities, indicates that new dwellings costing under $4,000 including the site were about 30 per cent of total urban building. This omits all dwellings reported under $500. The 1940 census reveals a vast additional amount of building in rural non-farm areas where prices are traditionally lower, hence new building under $4,000 may exceed 30 per cent. And since the Financial Survey reported that only 28 per cent of owner-occupant families acquired their homes by new building, acquisitions by income groups under $2,000 compare favorably with the average.

The assumption of a fixed relationship between value and income of 2 to 1, with rent 24 per cent of income (p. 25, Table VIII), fails to recognize the lower ratios for higher incomes. Sample studies indicate that for incomes of $1,500-$2,000 rent was only 19.7 per cent. Use of larger percentages of income for this group would purchase houses valued above $4,000 and increase the total.

The monograph assumes no savings, and debt as 100 per cent of value, whereas most purchasers make some cash payment. It assumes payments of one per cent of full value per month, hence a term of about eleven years, whereas payments recur on the unpaid balance and the term may be twice that indicated, such as with F.H.A.

Moreover, the implication that families not having new houses at prices under $4,000 cannot find adequate and livable housing within their purchasing power is contradicted by the 1930 census data that 40 per cent of then existing owner-occupied dwellings and 67 per cent of rented units were valued at less than $4,000. Allowance for the decline of one-third in value following 1930, would indicate that 74 per cent of existing units were within command of families with incomes under $2,000 for 24 per cent of income, or less. Hence, if 30 per cent of the new 540,000 houses in 1940 were occupied by low-income families, the provision of suitable housing for the remaining 70 per cent would require that only 2½ per cent of existing homes valued under $4,000 become available to these groups each year.

The chapter on housing costs concludes that site labor probably ranges from 25 to 45 per cent of the total cost, averaging about 30 per cent on one-

family dwellings. But in Part II it is estimated that the cost of all labor including original processes is from 73 to 89 per cent. It is therefore surprising to read that, "On the whole, there is no indication that high wage rates tend to discourage residential building, or that low rates tend to stimulate it." The report finds no correlation between wage scales and the cost of building activity and unionization, but the evidence is not convincing.

Discussing interest rates, the monograph states, ". . . the decline in effective interest rates between 1931 and 1940 is largely the result of various types of Federal intervention." Many would include consideration of the changes in international financial relationships. And again, "It cannot be said, at least for the time being, that a stated return is necessary to attract funds equivalent to mortgages." The report would have more value if it had considered the long-run consequences to housing of deficit financing, dilution of capital and artificial rate reduction which have brought about this situation.

It declares that, "with the passing of the Act setting up the U. S. Housing Authority, the Federal Government assumed the responsibility of providing decent housing facilities for those groups for which private industry does not provide." This may be straining the interpretation of this single measure.

Taken as a whole, the report tends to accept the existing set of cost-making factors and their methods of procedure and to discuss the housing question on the basis of assumed permanence of the prevailing situation. The principal hope extended for more housing is through improved technology supported by research.

Numerous informing sidelights add value to the monograph. The Appendix of 50 pages represents a useful compendium of data pertinent to the construction industry. The testimony of many witnesses warrants profitable examination of the hearings before the committee.

There are noteworthy omissions. There is no discussion of housing of small towns and villages and on farms, or of the great disparity between the value of urban and rural dwellings, averaging 5 to 1. In view of the official character of the report, more discussion regarding the relation of housing to the general economy would be welcome, as well as more consideration of alternative federal policies.

David L. Wickens

Washington, D.C.

No. 40: *Regulation of Economic Activities in Foreign Countries.* By Louis Domeratzky, Rudolf Callman, Agnes Roman, John H. Cover, and Nelson A. Miller. 1941. Pp. 177. 20c.

This monograph of 175 pages consists of seven parts dealing respectively with Great Britain (thirty pages), Germany (fifty pages), France, Argentina, Brazil, Chile, and Mexico, and an eighth part (two pages) of "Conclusions Regarding Latin America." Two-thirds of the part on Great Britain are devoted to the reorganization of the coal and cotton industries in the interbellum decades, preceded by a sketch of the general economic position of

the country after the First World War and the evolution of British governmental intervention in private industrial relations. The coal and cotton industry discussions are good factual summaries, but the absorption of attention in these two sick-industry cases results in the neglect of many important questions of British policy which a better planned monograph should be expected at least to touch upon.

The next part, comprising two chapters on the German experience, presents, in contrast to the part on Great Britain, a rounded and formidably documented survey of combination and control in German business, labor, and financial affairs. Yet in these two chapters, as in the rest of the monograph, the thinning effects of attempting to cover too much ground are shown in a tendency of the study to lose its often excellent analytical quality and lapse into generalities and tedious descriptive recitations of no very great significance. The "Conclusions Regarding Latin America" seem gratuitous and ill-advised, being little more than a collection of assertions, some unsupported and some of very doubtful correctness. The tone of this section is sometimes inappropriate as, for example, in the remark quoted from a popular magazine that ". . . having been mined for three centuries and milked for one, the Republics, particularly the more advanced Republics of Brazil, Argentina, and Chile, determined to do a bit of the mining and milking themselves. . . ."

HORACE WHITE, JR.

Washington, D.C.

BOOK REVIEWS

Economic Theory; General Works

Monnaie, Prix et Change. Expériences Récentes et Théorie. By ALBERT AFTALION. Nouvelle édition remaniée et très augmentée. (Paris: Sirey. 1940. Pp. 565.)

When this new and considerably enlarged edition of *Monnaie, Prix et Change* (originally published in 1927) first went to press, it was presumed that the work would soon be available to every student of French monetary theory. The events of the war, however, have decreed otherwise. The present review is based on one out of seven copies which by chance reached the author himself in a town of unoccupied France. The reviewer, having been a student of Professor Aftalion and for a few subsequent years his assistant, feels less able to give a critical appraisal of the book from the point of view of current trends in American theory than to present its basic content as viewed from the perspective of recent French thought.

When the first articles of the author on the subject of money appeared in 1924 and 1925, it was possible to consider him as one of those unorthodox theorists whose provocative but consistently negative criticisms would stimulate strong and persistent opposition.[1] This feeling persisted even after the publication of *Monnaie, Prix et Change.* Nevertheless, the work quickly attracted a large audience in France, even among prominent defenders of traditional thought.[2] Thus, in spite of the opposition which other works on monetary questions by the same author still evoked,[3] this earlier book was well on the road to becoming a classic in French literature.

In part due to the discussion subsequent to the publication of the first edition, but probably due even more to the general advance in economics since that time, the issues at stake in the recent edition relate less to the soundness of the critical survey than to the validity of the positive theory, which itself has been the subject of attack by other theoreticians, *e.g.*, Hawtrey, Heilperin, and Marget. One of the most important features of this enlarged edition, therefore, has been to give more emphasis to the reconstructive parts of the analysis.

The author continues, however, to lay great stress on his polemics against

[1] The American reader will recall, for instance, J. W. Angell's very acute summary of his first article in *The Theory of International Prices* (p. 295), in which the question was raised as to how this "irreconcilable opponent of the quantity theory of money" would give "a complete alternative theory of his own."

[2] *Cf.* the article of Professor H. Truchy in the *Revue Politique et Parlementaire,* at the time of the publication of the book and, more recently, the frequent quotations made by Professor Baudin in *La Monnaie et la Formation des Prix* (Paris: Sirey, 1936), pp. 482 *ff.*, 493 *ff.*, 496-97, 516, *et passim.*

[3] *Cf.* criticism by Charles Rist in the *Revue d'Economie Politique,* 1937, pp. 381 *ff.;* and 1938, pp. 224 *ff.*, and rejoinders by Aftalion and Pirou in the same periodical, 1938, pp. 288 *ff.*, and pp. 438 *ff.;* and by this reviewer in the *Revue Economique Internationale,* Nov., 1937, and Oct., 1938.

the quantity theory of money in its various forms, but still in the simplest and least sophisticated presentations. The reason is, in part, that old errors, although repudiated, tend to reappear. But primarily, his method is for the purpose of cutting the roots of the more elaborate theories, so as to lead to the conclusion that any further examination of refinements would only result in wasted effort. If the all too famous man of straw did not exist, the author would have invented him; for he wants us to see men of straw behind apparently living bodies.

It may be conceded that some of Aftalion's criticisms have lost their provocative character. Much is today admitted of what seemed bold and new when current theory blindly implied, despite analyses such as Mitchell's in the United States and Nogaro's in France, that changes in circulation were, especially under conditions of paper money, the initial source of all monetary disturbances, or at least that "the price-level is the effect and cannot be the cause of changes in other factors" (an assertion in Fisher's *Purchasing Power of Money*, page 182, which many theoreticians thought necessarily connected with the equation of exchange, even though the more rigid interpretation that attributes all major changes in M', V, V' to the underlying influence of M were repudiated). In consequence, it is possible that some readers of the new edition will not venture beyond the first steps of the critical analysis, believing that the problems there discussed have been surmounted. (They may reappear before long.) But, after all, that would be an implicit tribute to a book which by its clear-cut analysis—with constant connection between searching statistical elaboration and rigorous abstract discussion—has played a major rôle in the controversy.

For a revision of the problems, the organization of the new edition merits definite approval. In the first edition, recent monetary experiments were presented in Part I; the theoretical discussion followed in Part II; and Part III dealt with the theory of foreign exchange. The great advantage of this approach, from a practical point of view, was that it provided a striking summary of French and European monetary fluctuations during the post-war inflationary periods with regard to the relative intensities, actual sequences and discrepancies in the movements of currency, prices and foreign exchanges during the different periods. This remained a necessary complement to studies such as those by Dulles and Rogers of the French franc and by Young or even Laughlin of European currencies. In the new edition, other statistical data appear relating to the depreciation period between 1931 and 1939, but all these data are now generally distributed throughout the various sections of the work. This organization of materials gives a much clearer picture of the author's methodological approach which proceeds from hypothesis to empirical verification at each step of analysis, although reflections of each chapter are only elements within the general theoretical study.

For those readers who may be impatient to get in a condensed form some clues to the author's analysis, it may be suggested that they go directly to Part III (Recent Experiments and the Theory of Foreign Exchange). It is not greatly modified, although it does contain a new chapter on the history of French foreign exchange from 1914 to 1939 and a new distribution of the

topics, with supplementary comments on the theory of manipulated exchange. A progressive criticism starting from oversimplified theories with regard to the "quantitative" point of view (balance of payments theories) and the "qualitative" explanation (purchasing power parity theory) leads to the "psychological theory of foreign exchange" where the necessary connections between qualitative and quantitative factors are shown in "three stages of explanation." Of course, it is not impossible to oversimplify the "psychological theory" itself, claiming, *e.g.*, that "it consists in opposing one aspect to another."[4] The question actually at stake is whether the "individual appreciations" can be relegated to a *first stage* of the approach (Heilperin) or necessarily come in at an intermediate one and cannot be dispensed with (Aftalion).

If we turn back now to the constructive scheme proposed by the author for his general theory of money, we may suggest that it is both less *simple* and less *exclusive* than many commentators thought. Most of the new developments are to be found in a new chapter II (Part II—Recent Monetary Experiments and the Positive Theory of Money), where he emphasizes his preference for the income approach in most cases. We already knew how he found its applicability in the cases where causation is going from foreign exchange to prices, and then to velocities; increases in the demand schedules coming from the nominal income of importers, shareholders of foreign securities, etc. More is said about currency issues for budgetary purposes, increases in gold production, credit inflation, and various kinds of influences from abroad.

The author also takes greater care to distinguish this approach from Wieser's, many readers having been confused by the tribute he paid to this theoretician who first pointed out the theory of the marginal utility of money income. But it was clear that Wieser did not have the same starting point and did not emphasize the influence of foreign exchange.[5] Furthermore, the author explicitly rejects all of Wieser's limitations concerning income outlays. Following this passage, he indicates the qualitative elements which have led him to surmount the *théorie du revenu* and to propose what he previously called the "psychological theory" and which he prefers, at present, to consider as the "positive theory" of money. (This title is given to Part II, yet the alternative terminology is also used.) This theory, after being verified in the light of recent experiments in England, Switzerland, and France (1931-39), is finally integrated—as in the first edition—in the general theory of value, with three stages of explanations showing how qualitative and quantitative elements work together, as for the theory of foreign exchange (which follows it in the book).

If we can realize that Aftalion's theory is less simple than generally believed when one tries to utilize his "income approach" as a substitute for the equation of exchange, we must add that it is less exclusive and even less ambitious too. For instance, he protests against Professor Marget's assumption that he generally considers the notion of velocity of circulation as an element of superfetation "which appears to be introduced in order to save the

[4] Heilperin, *International Monetary Economics*, p. 114.

[5] Ellis, *German Monetary Theory* (Harvard econ. stud., 1934), pp. 81 *ff*. and pp. 176 *ff*.

quantity theory of money": the expression he used in a particular case "does not carry a general import but does refer to the special hypothesis examined. . . ."[6]

We must recognize, however, that such an instance is of great importance. The author, challenging the traditional assertion as regards the "passivity of prices" in the equation of exchange, very often emphasizes the fact that rising prices are induced from rises in foreign exchange. Generally they themselves influence the V V′ factors through different increases of income and we can notice a process of progressive extension in the movement of prices beginning from import and export goods. The point at stake refers to a rapid movement in a period of extreme depreciation "without any processes of that kind." There is what the author terms "an insufficiency of the income theory," and a psychological explanation is required. However, the correct one would not be found in the increased velocity of circulation which follows from the fear of hyper-inflation, for the V factors cannot increase indefinitely as prices do (p. 245): "Is it not, in this case, this diffidence itself, this depreciation of the currency in the eyes of individuals, which would constitute the direct favor of the rise in prices?"

If we admit Aftalion's explanation, the demarcation line would not be between the quantity theory of money and the income theory, as suggested in Hawtrey's criticism of a "false antithesis" formulated by the author.[7] Both these theories are to be discarded as far as they would tend to be exclusive. A general and "positive theory" ought to explain all these reactions, even "psychological."

The author definitely discards the quantity of money approach, even for the "international theory of gold" (aggregate influence of gold production on world prices[8]); but here the income approach is only this "better explanation" that Professors W. Oualid and L. Baudin have in mind in their attempts at conciliatory schemes (Professor B. Nogaro remaining in France the most resolute anti-quantitativist).[9]

Very firm, however, in the rejection of the quantity theories, he never suggested giving up the "quantity equation" (to take Professor Marget's terminology) which, as he emphasizes, "has the great merit of compelling precise ideas" (p. 18). His particularly simple algebraic formulation: R (revenue, monetary income) = PQ, is not proposed as a substitute for the equation of exchange, but as a complementary device "exact only in certain cases" (first edition, pp. 157 and 175; second edition, pp. 179 and 225) and particularly useful to show discrepancies between PQ and R (which would equalize within an isolated country), or even between PT and PQ.[10]

[6] The author gives these precisions in a new footnote (p. 246, n. 1): ". . . introduced *at this point* [là], I have said . . ." *Cf.* Marget, *The Theory of Prices*, vol. i, p. 353.

[7] *Jour. of the Royal Stat. Soc.*, 1934.

[8] *Cf.* A. Aftalion, *L'Or et sa Distribution Mondiale*, Paris, 1932.

[9] For a bibliography of the French controversies, *cf.* L. Baudin, *op. cit.*, pp. 597-613.

[10] *Cf.* the distinction between *identical equations* and *equations expressing equilibrium conditions*, as emphasized in J. Marschak, "Identity and Stability," *Econometrica*, Jan., 1942.

We would have a better understanding of the author's attachment to the income approach if we could realize the rôle it played not only in this book, but also in his explanation concerning the re-equilibrating *stimulus* to the balance of international accounts[11] and even in his theory of cyclical fluctuations.[12] It is always an intermediate and necessary stage in his research, not at all a *first* approach or an ultimate answer. The author is never satisfied with simple formulae and tends to make (as did the Austrian school) a deeper psychological approach or even attempts general explanations that we may call "pluralist"[13] but are, at last, as the author points out, a scheme of the different influences acting on the supply and demand schedules.

One might be disappointed by these conclusions as they involve a reversion from quantitative statistical thinking to qualitative economics. The author, however, has shown himself to be, on all occasions, rather pessimistic.[14] But Professor Aftalion, while "anti-quantitativist" in the former sense, has given a sufficient impulse to "quantitative" economic research to give hope for an integration of more and more elements of statistical precision within the general framework he finally proposes.

Forty-five years ago, Walras welcomed the creation of an independent school of economics in the French law faculties which would put an end, in that country, to "a monopolistic exploitation under the sign of liberty."[15] Aftalion's scientific work gives evidence of the results obtained since that time. Just prior to the war some essays in his honor were ready to be edited by a second generation of economists which would have given a greater indication of the direction and ultimate implication of Aftalion's approach to economic analysis.

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Challenge to Karl Marx. By JOHN KENNETH TURNER. (New York: Reynal and Hitchcock. 1941. Pp. viii, 455. $3.50.)

The author's approach is distinctly one-sided: he is interested primarily in what is wrong with Marx. Such negative criticism undoubtedly has its uses but it also has serious dangers. It leads to a disproportionate emphasis

[11] *L'Equilibre dans les Relations Economiques Internationales* was only published in 1937, but the author had that idea in mind for a long time, as was suggested in newspaper articles quoted by the present reviewer (Jean Weiller, *L'Influence du Change sur le Commerce Extérieur,* Paris, 1929, pp. 182, 242, 253).

[12] We may go back not only to his very well known *Les Crises Périodiques de Surproduction* (Paris, 1913), but also to his thesis on Sismondi (1899).

[13] His different stages of analysis recall the different "depth-levels" of modern sociologists. *Cf.* Gurvitch, *Sociology of Law.*

[14] *Cf.* the conclusions of his recent book, *l'Equilibre dans les Relations Economiques Internationales,* rejecting both the self-confidence of orthodox theoreticians and the audacity of their opponents.

[15] L. Walras, *Etudes d'Economie Sociale* (Paris, 1896), pp. 456-57.

on inconsistencies, predictions that failed to materialize, tools of analysis we now regard as clumsy and obsolete. These are the inevitable accompaniments of the development of thought. Every creative thinker makes many false starts and arrives at conclusions by paths which later seem unnecessarily difficult. The task of sifting and evaluating is of course highly important. But its object should be constructive. Mr. Turner is too much concerned with exposing the defects in Marx and not enough concerned with discovering the things that are of positive value to present-day students of society.

Mr. Turner is in addition laboring under certain handicaps. He frequently points out that Marx's economics rests squarely on the foundation provided by Adam Smith and Ricardo. And yet he himself lacks the thorough-going familiarity with classical economics which is necessary to a full understanding of what Marx was driving at. The kind of error he falls into as a result is obvious in his discussion of the tendency to an equalization of profits:

> Before Marx, Ricardo had stressed the "emigration and immigration" of capitals as tending to produce an average rate of profit. It should not be necessary to say that there is no such mobility of capital as Marx pictures here. The farmer or merchant who is dissatisfied with the returns from his investment does not often find it possible to give up the old trade to manufacture automobiles or open a bank. If he is lucky enough to have surplus funds, he may buy stocks, but in that case he is more likely than not to lose his money, no matter how prosperous the enterprise may be (p. 140).

Mr. Turner further cites statistical studies to show that there is in fact no such equality of profits "as Marx imagines." The classical economists, of course, never said that profits in all lines would actually attain equality any more than they maintained that capital already sunk in one industry could readily be transferred to another. Mr. Turner would find if he re-read Adam Smith's chapter seven, "Of Natural and Market Price," that most of his difficulties were anticipated and satisfactorily disposed of by the great master. The same misunderstanding of the classical concept of Law comes out again in the discussion of the "Law of the Falling Rate of Profit," the "Law of Wages," etc.

A similar handicap appears in the author's lack of familiarity with the Keynesian theory of money, income, and employment. This lack is particularly serious in a student of Marx. Some of Marx's most important insights, ideas he was struggling to express with the inadequate analytical apparatus then available, become thoroughly clear for the first time in terms of the modern analysis. The latter, on the other hand, has much to learn from Marx.

Consider, for instance, the problem of accumulation. Mr. Turner's discussion starts out in promising fashion: " 'The life-process of capital consists only of its movement constantly expanding, constantly multiplying itself.' ... the capitalist is a greedy fellow. In assuming the role of capitalist, he assumes the character of capital. 'His soul is the soul of capital. But capital has one single life impulse, the tendency to create value and surplus value. . . . Fanatically bent on making value expand itself he [the capitalist] forces the human race to produce for production's sake' " (pp. 104-05). But then Mr. Turner gets off on a sidetrack. He misses the vital point that the successful functioning of the capitalist economy is possible only under conditions which

permit the continued accumulation of capital. The modern investment-saving-income analysis brings out in detail why this is so. It shows exactly how an inadequacy of investment outlets produces depression and unemployment. Marx sensed the connection but was unable with the tools at his command to work it out in detailed, systematic fashion. His concept of accumulation, on the other hand, has important implications which the notion of saving lacks. Saving seems like too mild a force to produce such tremendous results. It is all too easy to assume that saving will automatically adapt itself to the need for it. Accumulation, on the other hand, is a relentless, driving force. It continues regardless of the need or opportunities for investment expenditure. Even depression and general impoverishment provide only a temporary stay. With every recovery of income, accumulation renews its pressure.

The analysis of accumulation—or saving and investment—throws significant light on other problems: wages, class conflict, international relations, the difficulties and possibilities of democratic action. These problems are greatly in need of serious and constructive analysis. Mr. Turner, unfortunately, has little to contribute on any of them, partly because his approach is chiefly negative and critical, but even more because he lacks the economic background necessary to understand what the real problems are.

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Agricultural Price Analysis. By GEOFFREY S. SHEPHERD. (Ames: Iowa State Coll. Press. 1941. Pp. viii, 402. $3.75.)

For twenty years intensive research in agricultural prices has been going on, somewhat unnoticed by the majority of economists. Sometimes this work has been crude; sometimes, unfortunately, tied up too exclusively with attempts at price forecasting. Now after many years of critical review, the statistical procedures have been modified and, at the same time, reliance on statistical analysis has become less marked. In turn, more attention is being given to the integration of the statistical study with the analysis of the marketing institutions and with the new developments in value theory.

Professor Shepherd has brought together and integrated the work done by the statisticians, by the analytical students of marketing, and by the theorists. All in turn is interpreted in light of changing institutions, with particular emphasis on government policy. This material is presented for "the reader who has a grasp of economics equivalent to that which he would get from one or two good courses in economic theory, . . . who knows something about agricultural marketing," and "knows something about statistical methods."[1] Though prepared as a textbook for advanced undergraduates, it is of distinct value to the professional economist and to those responsible for the government policy, both with respect to agricultural and to urban economic activity.

The feature of the book which stands out most is that three approaches

[1] From the *Preface*.

to commodity prices are interrelated and integrated: (1) The character of, and changes in, markets for farm products are presented not only in an early chapter on "The Evolution of Markets and Market Price Making," but also appear later in such sections as that showing the effect of government policy and of market decentralization on future trading, and of government policy on the competitive character of agricultural markets. Then these institutional changes are brought to bear forcibly on both statistical analysis and theoretical study of prices. The exposition and statistical illustration of the "price surface" idea certainly makes more accurate and understandable the geographical concept of a market and price relationship therein.

(2) Statistical procedures come to life for the student when he sees them used for the analysis of specific situations. Though the book uses these cases (mostly hog prices) for illustrations, the selection of price situations serves to show the scope of statistical analysis. The integration of this analysis with institutional change shows, for instance, that correlation analysis is limited by changes in the character of the market, and that the development of a larger spread between farm and retail prices may arise from somewhat permanent institutional changes. Of still greater significance is the integration of the statistical and theoretical analysis. Such concepts as "demand elasticity" and "change of demand," or of supply, are vitalized by being worked out quantitatively.

(3) This integration becomes more marked when the food stamp plan and milk control plans, cases of price discrimination, are studied. Here the nature and significance of value theory become clear. Similarly, the incidence of the processing tax on hogs (on the farmer until output is adjusted), the process of adjustment in the hog and cattle cycles, and the variability of farm and retail prices, all rest heavily on theoretical analysis supplemented by quantitative study. At the same time, institutional change and theoretical analysis are interrelated as in contrast of farm and industrial production and price-determining forces, and in the exposition of government policy.

Another outstanding feature of the book is that price and production control are explained and evaluated in terms of this integrated institutional, statistical, and theoretical analysis of farm product prices. Without judging the conclusions with respect to public policy, it can be said that here is a forceful answer to those who contend that theory provides no basis for public policy. For both the institutional and the statistical study of prices become meaningless, if not impossible, without being preceded by, and integrated with the theoretical analysis.

A few minor weak spots are present; no one is basic. In the theoretical analysis, the reader is sometimes left with a feeling of incompleteness. The discussion of price discrimination is a case in point (chap. 20). In contrast, "demand elasticity" is treated fully and precisely. Again, the treatment of deflation theory and statistical procedures could be interpreted as giving support to the idea that the general price level is itself a cause of agricultural price movements. Agricultural folk have been so prone to accept monetary cures for their ills that any statement which could be looked upon as giving the "general price level" a significant rôle is unwise. A vigorous presentation of recent

developments in monetary theory would have helped here. In fact, the whole discussion of both agriculture and industry during depressions would have been more clear-cut and more accurate if the income-consumption-investment analysis had been expanded sufficiently to clarify the readers' ideas on booms and depressions.

Finally, two parts of the statistical procedures deserve criticism. The reader is not warned sufficiently concerning inadequacies of data used in price analysis, particularly as compared to small differences in elasticities, etc., derived from such data. Though market price (possibly not farm price) data are probably more accurate than most industrial price data, quantity data, which are often not marketed volume but production estimates, have a considerable margin of error. Then a significant limitation of multiple correlation analysis, the assumption that the influence of independent variable B is the same irrespective of the value of independent variable A, is not brought out.

These criticisms are minor, however. Pioneering work necessarily has such slight weak spots which disappear in successive editions. In fact, one hesitates to mention them in light of the obvious merits of the book. Certainly students who go through this book will gain a firm grasp of price analysis, and the professional economists who peruse the presentation with care will find a realistic exposition of price-making and will gain a clearer view of price control problems and policies, particularly in agriculture.

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Theory of the Just Price. By Rudolf Kaulla. Translated from the German by Robert D. Hogg. (London: George Allen and Unwin. 1940. New York: Norton. 1941. Pp. 219. $2.25).[1]

The author of this book is quite aware that there can be no ideal, *a priori* just price. According to his analysis, ". . . prices of all commodites which are not strictly necessary to the satisfaction of vital needs can be maintained at whatever level suits the policy of the economic power-group concerned . . ." (p. 160). With respect to the necessities of life, however, an upper limit of prices and a corresponding lower limit to incomes are required. Should the prices of necessities tend to rise beyond the possibility of acquiring a subsistence-minimum, men will seek the aid of the state.

Elsewhere the author realistically discusses the rôle of government in resolving conflicts of economic interests (*e.g.*, pp. 182, 215). In the last chapter he considers governmental activity in connection with minimum wages, tariffs, and efforts to prevent the growth of monopoly. His own position is that "the State cannot help taking sides; it must do so, however, not in the interest of this or that particular group, but in order to serve the cause of the *common* welfare" (p. 217).

[1] The German edition of this book was reviewed by John V. Spielmans in *Am. Econ. Rev.*, vol. xxviii, Mar., 1938, pp. 120 *f.*

Kaulla stresses the importance of the legal structure in the determination of value. He maintains that state intervention is a necessity for a highly developed economic system. Contrary to the basic assumptions of prevailing economic theory, he asserts that "there are three terms, not two, in the problem of value: the object valued, the individual who values it, and the active presence of the *State*" (p. 95). Although the classical school stressed the object and the marginal utility school the subject, neither group considered state interference as anything more than an irregular disturbance of natural processes.

This is reflected, according to the author, in the attitude toward taxation, which has also been treated as a form of state interference in the "natural" course of economic life. Nevertheless, the persistency with which taxes continued to be levied required attention to problems of shifting and incidence. Such attention implies an interest in determining whether the taxes are "just." On the other hand, because of the underlying assumption of natural economic processes, scarcely any attention has been directed to the larger problem of the passing on of costs in general. From the point of view of just price analysis, this problem is obviously of the greatest significance, for the "justice" of prices depends ultimately upon the way in which costs are shifted.

The book's German origin is reflected in the author's constant use of the term "State." A more euphemistic expression would be more appealing to American readers. Nevertheless, the relationship of the author's thesis to American affairs cannot be altogether denied. As a matter of fact, a comprehensive study of American developments would be of considerable interest. Such a study might very likely suggest that in a rough and tumble way we appear to have been moving in the direction of "just" prices without often realizing it. Certainly the relationship between our agricultural policies, for example, and a just price analysis is fairly clear. A thorough study of all price-fixing might even suggest the need for a reorientation in the methods and objectives of political economy.

Meanwhile, those seeking clues which may be helpful in arriving at a more adequate theoretical summation of economic developments will doubtless find at least some features of this little book suggestive. It has been translated into good English and is easily read.

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Essential Economic Principles. By Archibald MacDonald McIsaac and James Gerald Smith. (Boston: Little Brown. 1941. Pp. x, 504. $1.50.)

Essential Economic Principles is a revised version of *Introduction to Economic Analysis* and it is offered as an alternative to the latter. In general approach, the newer treatment follows the lines of the original volume. Certain chapters have been rewritten and some of the material has been rearranged but, with exceptions to be noted below, it is the same book in an improved form. One wonders about the location of the boundary line that

Rev., vol. xxviii, Mar., 1938, pp. 120 *f.*

determines whether a new writing shall be called a revised version or shall rather be given a new title. However, to the teacher who must explain the advantages of product differentiation, this example offered by the publishing industry will be gladly received.

The book will of course be welcomed by those who believe that the chief objective of a beginning course is to give the student a clear grasp of the theory of value and distribution. Within this framework the treatment is impeccable.

The arrangement is conventional and logical. An examination of the simple concepts such as demand, the elasticity of demand, pure competition, leads up to a discussion of the short-run and long-run equilibrium of the firms and of the industry in conditions of pure competition and monopoly. The theory of distribution is also treated along conventional lines. There is an analysis of the relationship of a factor's marginal production and the demand for that factor and also of the significance of the elasticity of supply of the factor to the firm.

In the original volume, the connection between the demand for any factor and the cost functions of the firm was shown and it was shown that producer's demand could be computed in part from a knowledge of these cost functions. The present marginal productivity formulation, while it adds nothing to the substance of the earlier analysis, is probably to be preferred from a pedagogical point of view. This is perhaps the most substantial improvement in the rewriting.

The treatment of the interest problem is also somewhat better. Of course, it is by no means complete for there is no discussion of monetary institutions in the book; for that matter, there is scarcely more than an acknowledgment of the rôle of labor organization in the discussion of wages. However, it is unjust to criticize a book of this sort for what it omits. It is merely one of a series and it is designed for use in conjunction with other volumes in the series.

In comparing it closely with the earlier formulation, one is impressed with the ability of the authors to simplify certain parts of the original treatment that proved to be unnecessarily difficult. For what the authors try to do within the fields of value and distribution, there must be full praise. However, when with utterly inadequate weapons they venture out into the great world of aggregate demand for goods and factors, and of the business cycle, it is then that serious criticism is in order.

One does not have to rely on Keynesian doctrine to discover authority for pointing out the crucial difference between the effects of a change in any one variable; for example, in wage rates, on the firm or on a small industry on the one hand and, on the other, the effects of a similar change upon the whole economy. Professor Pigou also emphasizes this distinction. Value theory, as ordinarily conceived, is designed to explain the allocation of factors between industries and it can be used to explain the nature of the aggregate supply function. But it should not be used—or perhaps it should be used differently—to analyze what Keynes and Pigou call the aggregate demand function.

While we can derive the demand for labor in any one firm on the assump-

tion that conditions including wage-rates) in the rest of the economy are given, we cannot secure an aggregate demand function for labor over the whole economy by simply adding together these individual schedules. A complicated adjustment is required. Anyone who has struggled with the problem of the effect of a change in wage rates on employment will agree about the need for that adjustment although there will probably be no general agreement as to its nature.

A full treatment of this problem would perhaps not be possible in a book on this elementary level and, at this stage, there is perhaps too little agreement on fundamentals among students of such questions. But, in that case, rather than using weapons which were never forged for the treatment of business cycles and of the problems of aggregate demand, an elementary textbook could make a notable contribution by pointing out the uses and the *abuses* of the theory of the single firm and of the industry; that is, of our accepted theory of value. Its use within the appropriate framework is clear, but the temptation to use it outside that framework is difficult to resist.

In spite of all the authors have to say about price inflexibility and changes in weather and tariffs, and so on, in their discussion of these problems of the economy as a whole, they do not confine what they have so clearly expounded to its proper place. But in that respect they follow the example of almost all texts.

Otherwise, as has been noted, the book provides a clearly presented and up-to-date statement of value and distribution theory.

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Economic History

French Interests and Policies in the Far East. By ROGER LEVY, GUY LACAM and ANDREW ROTH. I. P. R. inquiry series. (New York: Am. Council, Inst. of Pacific Relations. 1941. Pp. xi, 209. $2.00.)

An introduction and six chapters by Roger Levy, entitled "A Century of French Far Eastern Affairs," is ostensibly the pièce de résistance here. To the end of chapter III, France's cultural and economic achievements in China and Japan are ably summarized, with the warranted emphasis on missions. France's mediocre trade position is formally explained chiefly in terms of the small number of active French business men in the Far East. The character of French investments, which are mentioned in some detail, suggests a tendency to take fixed rates of interest rather than risks, but the author does not mention this point. Indo-Chinese trade, including that with France, is sketched on pages 22-26 in connection with Franco-Chinese economic relationships. This discussion could have been greatly strengthened by more attention to the imperial tariffs and the price levels involved. Chapter IV, on French trade in Southeast Asia and in the Pacific, is short and desultory,

differently—to analyze what Keynes and Pigou call the aggregate demand function.

While we can derive the demand for labor in any one firm on the assump-

with almost no emphasis upon Indo-China. The two remaining chapters deal with France and the Sino-Japanese conflict to about the end of 1938.

It is these last that Lacam's three chapters on the economic relations of Indo-China "supplement." In fact, they do far more: this paper is practically an independent one by a man familiar with the country and the trade statistics. Disorders in southern China, difficulties of communication which even railways and one good road could not overcome under peacetime conditions, the resistance of Chinese authorities to foreign economic collaboration, low purchasing power in southern China, and the lack of contrast in excess commodities are the main reasons given for the minor amount of trade across the land frontier and the inability of land routes to compete with Canton and Hong Kong for what there was. A final chapter of three pages sketches the effect of the war (or "China incident") for a little over a year, to "Munich."

Part II (French Indo-China in Transition, 1938-1941) is in a sense a "supplement" by Mr. Roth to the earlier part of the book, but it is work of quite a different character. Dealing with a short period, from Munich to about March, 1941, it justifiably—and necessarily, I think—follows a narrative pattern; for the timing of these events is all-important to any clear notion of their unfolding. The account falls into three divisions: I, from Munich to the outbreak of the European war; II, France at war, to the collapse in June, 1940; III, Indo-China adrift, from June, 1940, to March, 1941.

The author has used great industry and entire frankness in drawing upon what sources were available for such recent events in a region about which it has always been hard to get information. Especially considering the difficulties and the nearness of the events, this is an amazingly factual and calm recitation of one of the least credible dramas in modern history. It is an account of what the Japanese wanted in and with Indo-China and how they got it, together with the parts played by the French factions, the Chinese, the Siamese, the British and ourselves. Nothing short of the present situation, a year beyond this study, could have shown how revealing it genuinely is. Considering the ease of reading this book from pages 53 to 70 and from pages 85 to 197, I can think of few enterprises more to be recommended for getting a clear-cut general introduction to what is now going on in Southeast Asia. The account is itself so compact that an attempt to "review" it in a few paragraphs would be absurd. Incidentally, it is easier to criticize the French authorities, in Indo-China and in Vichy, than to point out exactly what they should have done.

M. M. Knight

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Economic Systems; National Economies

The Structure of the Nazi Economy. By Maxine Y. Sweezy. Harvard stud. in monopoly and competition no. 4. (Cambridge: Harvard Univ. Press. 1941. Pp. 255. $3.00.)

Mrs. Sweezy's book, the fourth of a series of monographs on selected as-

pects of the general problem of monopoly and competition, is a well-documented scientific analysis of the structure of the nazi economy. Its only weakness, which cannot be helped, is the fact that Mrs. Sweezy's investigations, results, and conclusions are based on German official figures and statements. Mrs. Sweezy, however, has taken great pains in scrutinizing the official figures in order to determine their objective value and has used German statistical data with the utmost care. Her close observation of the working of the nazi system—made possible by a traveling fellowship—has enabled her to present a trustworthy picture.

The monograph begins with a short description of the status of Germany's economy before Hitler and of Germany's economy under Hitler up to the outbreak of war. As is commonly known today, the nazi economy even before the war began was a war economy and therefore few changes were necessary when war actually broke out. Mrs. Sweezy then shows the extent to which the state in Germany directs and controls economic activities. On the one hand, the Nazis hastened to return to private capital a number of monopolies held or controlled by the state, including banks, demonstrating thus to a capitalistic world their anti-socialistic tendency. On the other hand, they have built up—apart from Russia—probably the greatest state concern in the world—the Hermann Goering Works, a true industrial empire.

The best chapters of Mrs. Sweezy's book are those on corporations, income, consumption, and social welfare. Mrs. Sweezy has previously dealt with German corporative profits and the distribution of wealth and income under the Nazis.[1] Her analysis of the changes in the profit ratios for corporations is illuminating. It should be read carefully by all who are trying to understand the structure of the nazi economy.

Mrs. Sweezy tries to answer the all-important question as to who is gaining and who is losing in the nazi economy. Her conclusion that it is capital which has been favored by the Nazis will be doubted by many observers, but Mrs. Sweezy gives many facts to support her statement. A considerable rise in the profit ratio, based on the change from a depression period to a boom period, is contrasted with the stabilization of wages at the depression level. In spite of increases in employment and in working hours, the percentage of earned income in the national income fell from 69 per cent in 1929 to 63 per cent in 1938, while the percentage of total income from various kinds of property rose from 22 per cent of the national income in 1929 to 28 per cent in 1938. The average inequality was greater in 1935 than in 1931. However, it should be noted that, at least for the duration of war, all capital is at the disposal of the government and though no confiscation has taken place, capital had "voluntarily" to give up the right to dispose of its money at will. There is, however, as Mrs. Sweezy points out, one group in Germany which appears unequivocally to draw special favors from the Hitler government, and that is the National Socialist Party and its affiliated organizations. Many of its functionaries have entered the field of industry and all who are in the

[1] See *Quart. Jour. of Econ.*, May, 1940, pp. 394-98; *Rev. of Econ. Stat.*, Nov., 1939.

monopoly and competition no. 4. (Cambridge: Harvard Univ. Press. 1941. Pp. 255. $3.00.)

Mrs. Sweezy's book, the fourth of a series of monographs on selected as-

unfortunate position of having to compete with them are at a distinct disadvantage.

Mrs. Sweezy destroys the legend of a superhuman genius who directed Germany's financial system. She shows that Germany's price and financial policies never followed a preconceived plan. Each emergency was met as it appeared. All who hold that the collapse of German economy is just around the corner on account of its faulty financial policies will be disappointed. The German system seems to her to be soundly based on a tight control over capital and investment markets and over wage rates and prices.

Not quite up to the standard of the book is the chapter on regimentation and conscription of labor. Mrs. Sweezy evidently takes the German labor front as a labor union. She believes the Nazis have "reorganized" the labor unions because "The National Socialist Government recognized that destruction of the labor unions might strengthen radicalism among the workers" (p. 161). But the Nazis *did* destroy labor unions.[2] Nor do the Nazis deny it.[3] Not for a second would the Nazis allow the German labor front to be taken as a labor union, and any attempt to classify it as such is condemned to failure. The labor front consists of employers *and* workers. The employers do not have "representation" in the labor front, but they are a part of it. In addition, the labor front has no authority to deal with matters concerning wages, hours of work, or other working conditions, which are the main objectives of a labor union.

Strikes have never been prohibited by law. Labor disputes, if not settled by mediation, still go to the Labor Courts,[4] while the jurisdiction of the Social Honor Courts is confined to different types of violations, as enumerated by Mrs. Sweezy on page 166.[5] Overtime for the ninth and tenth hours of labor was restored by an order of September 3, 1940, as a consequence of continued resistance on the part of the workers.

Mrs. Sweezy is right in saying that the provisions of the Social Honor Courts seem to be directed mainly against workers and less against employers. But, contrary to expectations, the majority of the cases brought before them have been directed against employers.[6] The reason probably is that there are other, more effective means available to the authorities for dealing with violations on the part of the workers. Experience so far has fully confirmed Mrs. Sweezy's other contention that, as far as the employer goes, the law is likely to be applied against owners of small shops. Out of 189 cases against employers which arose in 1936, nearly three-fourths involved handi-

[2] See P. Waelbroeck and I. Bessling, *Labour Policy in Germany under the Nazi Regime* (Montreal: Internat. Lab. Office, 1941), p. 14.

[3] See *Bulletin of the World Economic Archives of Hamburg*, No. 13, May 1, 1935, p. 6.

[4] Not to the Social Honor Courts; see Sweezy, p. 164.

[5] The enumeration leaves out the most important offense: A member of the confidential council can be punished "if he interferes deliberately in the conduct of the establishment or maliciously disturbs the community spirit in the works community."

[6] In 1936 the Social Honor Courts had to deal with 251 cases, 189 of which were directed against employers. See *Pol. Sci. Quart.*, 1938, p. 366.

crafts, agricultural, and small industrial enterprises. It should be noted that the figure of 251 cases in 1936 for the whole of Germany is very small indeed and has since further declined.

Mrs. Sweezy's book is a most valuable contribution and will help to clarify many confused notions which are current regarding the structure of the nazi economy.

JOSEPH MIRE

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A French View of the Netherlands Indies. By G. H. BOUSQUET. Translated by PHILIP E. LILIENTHAL. (New York: Oxford Univ. Press, for American Council, Institute of Pacific Relations. 1940. Pp. viii, 133. $1.50.)

As a foreword explains, much of the "Moslem policy" part of the original French book on *Dutch Moslem and Colonial Policy* is omitted from the translation, and a chapter on the international position of the Netherlands Indies added. The English title does not fully suggest the peculiarities and limitations of the study.

Professor Bousquet went to study Moslem policy. This would seem to exempt him from references to Indo-China. However, he admits that the Indonesian culture is largely intact beneath the Moslem superstructure in the Netherlands Indies, and frankly regrets his inability to make the suggested comparisons. This still seems to me lame, for he asserts the superiority of French policy, in material respects and particularly in spiritual ones, without proper allowances for the fact that North Africa is a really Mohammedanized country in the Temperate Zone and at the doorstep of Europe. The author admits that the "modern reform movements" in the Netherlands Indies, though Moslem in name, have been basically nationalist in fact. This does not apply to North Africa, save to some extent in Tunisia.

Political reforms since 1900 have not given the Indies a parliamentary system, which Professor Bousquet thinks they need. The French example, if any, somehow escapes me. Nevertheless, some criticisms of the extreme rigidity of Dutch native administration, regardless of high-grade personnel and the most detailed of cultural investigations, are much to the point. This general policy of minutely planned paternalism is modified in a curious way which Vandenbosch and others are criticized for neglecting. "Prentah aloes" or "gentle compulsion" introduces local flexibility of action into the general system as seen on paper by the use of oral rather than written instructions. Thus what is flatly illegal can be done locally without serious danger of a rumpus, since nobody is formally responsible and everybody has an interest in keeping the surface smooth.

There are chapters on the "process of civilization" (the "progress" of Europeanization, largely) and on "Dutch colonial character" (compared with French). The added chapter on the "International Position" deals with trade, with the rights of culture groups, etc., quite briefly. There is not much on "conditions" in the sense of the economist as such. Nevertheless, this is an

directed against employers. See *Pol. Sci. Quart.*, 1938, p. 366.

illuminating "background" book under an English title which is not so illuminating regarding the subject matter.

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Statistics; Economic Mathematics; Accounting

Statistical Cost Functions of a Hosiery Mill. By Joel Dean. (Chicago: Univ. of Chicago Press. 1941. Pp. ix, 116. $1.00.)

Since studies of empirical cost functions are all too few relative to the interest in the subject, this recent contribution should be welcomed by all. It seems evident to this reviewer that if progress is made in economics, it will come from such studies as these which attempt to analyze actual data in the light of a formalized methodology. It is better to measure imperfectly than not to measure at all, for only through actual measurement can we appreciate the unreality of our theory and the complexities of concrete situations. Professor Dean has been a pioneer in the field of cost determination, and this recent study reflects the wealth of experience acquired in previous research.

His treatment of the data shows an appreciation of difficulties that may arise when dynamic facts are considered as elements in a static schema. Careful selection of his time period and of the particular plant studied greatly increased the validity of his analysis. For example, constancy of the size of physical plant, a minimum amount of technical progress, stability of management, uniformity and completeness of cost records, and a number of observations large enough to permit generalization were all sought and are quite well achieved in the present study. The existence of a wide range of output was also attained, but unfortunately the variation occurred mostly between two periods, one of a high level of output and the other of a much lower level. According to the data in Chart 13 (p. 49) output was between 3,000 and 4,800 dozen pairs for the first 34 months and between 400 and 3,000 pairs for the last 14 months.[1] This is a very serious flaw in the data since it is very difficult to separate those changes due to time from those changes due to output. In the last period we have no output equivalent to that of the first period and so cannot analyze the variance that might have occurred in the cost of identical outputs at different periods. Furthermore, there is a bunching of the observations around certain output levels seriously impairing the significance of the correlation technique which is used in analyzing the data.

The rectification and adjustment of the various costs is very well done in light of the many difficulties present. For example, the cost of silk was omitted "partly because the dominant importance of this variable cost would obscure minor departures from linearity in operating costs and partly because silk cost could be allocated to individual items with sufficient accuracy to raise no problem in the determination of marginal cost. Since silk costs are assumed

[1] Data in this chart present costs instead of quantity, but conversion of costs into quantity can be simply computed since this chart assumes linear total cost.

to be proportional to output, their elimination may prevent rather than induce an exaggerated appearance of linearity. The justifiable suspicion that silk costs might increase more than in proportion to output at extreme levels of operation as a result of wastage and spoilage is not borne out by the analysis of replacement cost" (p. 38). In other words, Professor Dean has not approached the problem by a hammer-and-tong method in following literally the dictates of the theory, but has rather used an intelligent appreciation of how to achieve his purpose by other than direct methods. The breakdown of costs used is quite extended, certainly coming up to the standards required by the problem. Furthermore, intelligent omission of such things as stationery, traveling expense, freight and express, building repairs, oil, etc., seemed quite justifiable on the ground that they would have little to do with the shape of the cost function or else that they were relatively unimportant and would contribute little to the analysis. The use of monthly data greatly facilitates the employment of lags in relating cost to the proper output.

After such treatment of the original material, Dean then presented his rectified and adjusted measurements in the form of scatter diagrams. One could well wish that more writers would follow his excellent example since this form of analysis enables the reader to gain a better understanding of the data than could be achieved by any possible number of statistical devices. It is unfortunate, however, that nowhere in the whole study were the original or adjusted data given in other than scatter diagram form. This made further computation on the basis of Dean's data impossible and many readers will be quite disappointed since no checks, other than those occurring in the analysis, can be brought to bear on the reliability and significance of the regressions.

These scatter diagrams substantiate a point which was mentioned above, namely, that the majority of the cases are concentrated within a small range of output. Over forty per cent of the observations occur within an output range which is only ten per cent of the total output range; within an output interval constituting over fifty per cent of the total output range, only seventeen per cent of the observations may be found (p. 22).

Output	0	4	8	12	16	20	24	28	32	36	40	44	48
No. of observations	1	3	4	2	2	0	1	2	4	18	10	1	

The scatter diagram reveals one more important factor to be considered. In the ten per cent of the range of output within which forty per cent of the observations lie, the variation of costs is quite wide. For example, an output of 37,000 pairs of silk hosiery cost at one period $60,000 and at another period $90,000. This is most disturbing in light of the highly rectified data which have been deflated for all price changes. Indeed it casts serious doubts on the significance of the values obtained for observations in other parts of the output range. It is quite proper to ask the question as to whether, if the observations had been more numerous, we might have had an equivalently wide scatter over the other parts of the range of output. If this were so, the

quantity can be simply computed since this chart assumes linear total cost.

correlation coefficients would be much lower than those which were actually found by Professor Dean, and absolute linearity of the total cost functions would be almost impossible to establish.

It is unfortunate that Professor Dean does not develop the analysis of these variations. Perhaps some sort of procedure such as accountants use in explaining the variance of actual cost from the standard cost set-ups could be employed here. Influences other than merely output variation have had a decided bearing on cost. Dean's nearest approach to solving this problem is the exploration of a number of independent variables in order to ascertain their effect on cost. With the exception of the magnitude and direction of change of output from the previous output period, all the independent variables were found to be of little importance.[2] Further analysis indicated, according to Professor Dean, that linearity was present between the average first differences of cost and magnitude and direction of change in output. In other words, "short-run changes of cost tend to be proportional to changes in output regardless of magnitude or direction of the change" (p. 43). It must be noted here that this does not mean that the total cost output regression is linear. The above linearity can exist with curvilinear total cost output regressions if the level of output and the magnitude and direction of output change are unrelated.

Actual analysis of the rectified data of cost and output is developed according to whether it is productive labor cost, non-productive labor cost, or overhead. The total of these becomes combined cost. Linear regressions were fitted to all sets of the data and the justification for such procedure was based on: (1) analysis of marginal and average cost behavior, and (2) analysis of curvilinear regressions.

Unfortunately no scatter diagram was given for the relation between average first difference and output. We are told that a horizontal line fitted the data best, but no supporting evidence is given. The correlation is extremely low, $.18 \pm .15$, and it is hinted that the scatter is quite wide (p. 43). It would seem probable, in light of the correlation and wide scatter, that quite a few non-horizontal lines might be fitted. Certainly there would not be much danger in lowering the correlation coefficient by very much. Average cost analysis yields a regression which decreases with increasing output, approaching a horizontal position at the highest level of output, if the wide scatter is neglected. Unfortunately, however, we should not neglect this since the exact shape of the average cost function is important. In any case, even if a regression of the type suggested were the correct function, all this would tell us would be that marginal costs did not rise appreciably above average costs at high levels of output. In the case of both marginal and average cost analysis, then, it is impossible to choose between linear and non-linear total cost output regressions since both could occur with the existing data.

The statistical tests of linearity, furthermore, are no more satisfactory. Dean has shown quite ably that the regression coefficients of the parabolic

[2] Some of these are: Style variation, difference in specifications, seconds, backwinds, transfers, replacements, style changes, specification changes, difference in piece rates, technical progress, shifts, labor turnover.

and cubic regressions are small relative to their standard errors so that zero coefficients for the squared and cubed terms are quite probable (and thus linearity). This, however, is no solution. Unlike other mathematical situations, it does not follow here that the less complicated function is better if fully as significant as one of a higher order. In an economic sense, a linear relation is no "simpler" than a curvilinear relation. Furthermore, it will be seen from Dean's analysis that curvilinear relations are statistically as signficant and probable as linear relations. He is quite right in pointing out that, while the cubic regression fitted to the data may be statistically probable, yet, due to the fact that its signs are opposite to those needed to describe the marginal cost curve of economic theory, we may quite well reject this curve. Since, however, the standard errors of the squared and cubed terms are large relative to the coefficients, it would be quite possible to have, within the standard error limits, an orthodox U shaped marginal cost curve which varied considerably over the range of output. In reality we find that no test rejects a linear regression, but neither does any reject a curvilinear regression. It would have been of great interest had Professor Dean divided the data into two groups—for example, outputs 0-20 and 24-48— and then fitted linear regressions to each of these groups. If this had been done, I believe that the slopes of these regressions would have been found to be quite different from each other. This should not occur if the sample were sufficiently reliable and marginal costs actually constant over the given range of output.

The statistical tests of linearity as conceived by Professor Dean seem to admit strong probability of large variation in marginal cost. In the parabolic equation the standard error of the squared term is large enough to allow the possibility of either increasing or decreasing marginal cost.[3] If the true coefficients of the squared term were at the lower limit of the standard error, then at 4,000 dozen pairs marginal cost would be about 90 cents above the marginal cost at 45,000 dozen pairs. If the true coefficient were at its upper limit of the standard error, marginal cost at 4,000 dozen pairs would be 64 cents below the marginal cost at 45,000 dozen pairs. This would represent a large percentage change since marginal cost of a linear regression figured by Dean came to about $2.00. The cubic equation, being of a higher order than the parabolic equation, could naturally exhibit fully as much variation as the parabolic curve, since by considering the cubed term as very small or zero we would have a parabolic curve. Since actual data are lacking, estimation of marginal cost variation in this case is difficult.

It is interesting to note that in the appendix, where weekly data are analyzed, marginal cost of the parabolic curve falls from about $3.75 when production is at 4,400 dozen to about $1.50 when production is at 8,000 dozen. The range here is smaller than in the case of monthly data, and yet the variation is considerable. The reason Professor Dean rejects a parabolic

[3] It has already been noted that the distributions of observations are in no sense "normal" and so, as Professor Dean points out (p. 48), "the conditions necessary for the validity of such tests are not met by the cost and output observations. This may mean that the limits of error are much wider than those presented here."

regression in the case of weekly data is based on the argument that the monthly data yield linear regressions. In the opinion of this reviewer, there is no greater statistical evidence for constant marginal cost than there is for increasing, decreasing or parabolic marginal costs. I would be inclined to agree with Professor Dean, however, that constant or nearly constant marginal costs are probably correct in the case of this mill. My impression of this is derived from the excellent description of the mill contained in this study and not from the empirical cost data which are presented. The possibility of this conclusion being wrong cannot be statistically checked due to the limitation of the empirical cost and output data.

It is important theoretically that such uncertainty arises as to what the actual shape of the marginal cost function may be. If an entrepreneur cannot know within a wide margin what his incremental costs may be, we find that much of our theory will break down. In one sense we are interested not in what the cost function is, but what it is considered to be by the producer. Therefore, if it is impossible to discover empirically what the function may be, it may have little or no relation to what the producer believes since he too will be in a state of ignorance. Dean has presented us with a case in which the dynamic elements have been eliminated as carefully as possible, but reality is even more complex and the producer is forced to consider these elements. It is easily conceivable that the concept of sharp-edged equilibrium may have to be revised and limits set up within which it is realized that cost elements will not determine the quantity of output. Perhaps cost analysis as revealed by empirical cost studies can never solve the problem of what actual cost output relations would be. Further exploration of the cost function may quite well be in order by concentrating on the physical counterpart of those cost items which are crucial in the analysis of marginal cost. In any event, the efforts of Professor Dean are a valuable contribution in this field, revealing many of the difficulties that must be met.[4]

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Public Finance; Fiscal Policy; Taxation

The Taxation of War Wealth. By J. R. HICKS, U. K. HICKS, and L. ROSTAS. (New York: Oxford. 1941. Pp. x, 304. $3.50.)

A more timely book than this would be difficult to imagine. Presenting an interesting and, considering the pressure under which it must have been written, a remarkably thorough analysis of the excess profits tax and the capital levy, this volume is required reading for anyone seriously interested in the problems of taxation during a period of intense war effort.

[4] In connection with this review, attention is called to an article by Mr. C. Reinold Noyes, published in the September, 1941, issue of *Am. Econ. Rev.*, pp. 473-92, "Certain Problems in the Empirical Study of Costs."

The contents fall into two well-defined parts. There is a theoretical analysis concerned with the general problem of war finance, but placing especial emphasis upon the kinds of taxes which are presumed to fall upon incomes associated with the effects of the war effort itself, and the so-called "capital levy." In addition, there is a series of chapters which presents in summary fashion the experiences of nations that have already attempted the application of this sort of taxation. The latter will not prove quite as interesting to most readers, who will be well advised to focus their attention upon Parts I, II, and V which contain the generalizations relating to the proper form and rôle of the taxes on war wealth, and for which Mr. J. R. Hicks assumes primary responsibility.

The central thesis is laid down in the Preface and runs as follows:

"The greater part of the cost of war needs to be met out of taxes which fall in the ordinary way upon ordinary incomes." Based as it is upon a comparatively thorough study of the special taxes associated with war, this conclusion is apt to be quite unpleasant to a great many people, especially those who are inclined to place major emphasis at the present time on the development of the excess profits tax. And yet it is very difficult to disagree with Mr. Hicks's conclusion. The main objective of war taxation is the control of consumer income. If this is to be accomplished a tax system must be constructed which is broad in its scope, quick and flexible in its impact. The war taxes discussed by Mr. Hicks are not very satisfactory when judged by these criteria.

The excess profits tax is, in the absence of the extreme price inflation which it is supposed to assist in preventing, relatively narrow in its impact; fails for the most part to tap the chief source of consumer income, wages. In this respect it is even less satisfactory than a tax on corporate net income would be, and the latter itself cannot qualify as the chief weapon in a war finance scheme because it has a relatively narrow scope.

If constructed according to traditional plans, the capital levy would fall beneath the same charge. It too would miss a large proportion of the total income of the civilian economy; it too would have to be supplemented with other taxes, and the latter rather than the capital levy itself would be the primary instrument for the control of consumer income.

From the point of view of flexibility and rapidity of collection neither capital levy nor excess profits tax makes a good showing. By its very nature the levy cannot serve as a part of a continuing program and the delays involved in its administration are notorious. The excess profits tax might be made to give some flexibility to a revenue system, but the extreme difficulty of defining excess profits and translating the definition into detailed administrative rules tells heavily against the possibility of even reasonably prompt collection. This is a very serious defect from the point of view of the primary objective of war taxation.

Yet Mr. Hicks is aware, as all of us are, that extreme pressure will be applied to use these special war taxes as a means of extracting a large contribution from persons in the upper income brackets. Moreover, Mr. Hicks is aware that a failure to satisfy the demand for this sort of taxation will be

quite unfortunate in that it will place a selling point of major importance in the hands of people who are attempting to head off measures intended to control lower bracket incomes. Hence the conclusion can be reached that at least the excess profits tax is desirable even though it ought not to be treated as the keystone of a war tax program.

The question then arises as to the form which such a tax ought to take. There are two fundamental choices which must be made. Is the tax to be imposed on the excess profits of business or corporate business taken alone? Or is the tax to be a general levy on added income applying to persons as well? The second question is the choice between a tax levied on high incomes generally and one which is aimed specifically at additional income obtained during the war period, which is over and above that arising during the years prior to the impact of the war boom.

The somewhat guarded approval which Mr. Hicks bestows upon an added income tax on persons used as a supplement to an excess profits tax on business must be viewed somewhat critically if one has in mind the application of the conclusions reached to the tax program of the United States. A tax on added income of this sort requires a comparison between income received during the pre-war and that of the war period. The data for such a comparison are meagre in this country because of the limited scope of the pre-war personal income tax. This fact, taken together with the added difficulties of administration involved, raises a distinct presumption against a levy of this sort in our own case, especially when the measure is used as a substitute for additional rates applied under the ordinary personal income tax. While this conclusion seems inescapable, it is disappointing because the idea of a general tax on war income is very attractive in itself and becomes increasingly so when one observes the erratic manner in which the war affects the economic status of particular individuals.

Mr. Hicks also bestows his blessing upon the so-called "war profits" as contrasted with the "high profits" form of excess profits taxation. This boils down to the general use of the so-called "base period income" formula, a most interesting conclusion in view of the implicit approval bestowed upon the form of the excess profits tax now in use in this country, especially since that form has been the object of persistent criticism on the part of the federal treasury and recently has been attacked by a very distinguished American student of excess profits taxation.[1]

The objection to the position taken by Mr. Hicks is easy to see. The process of constructing a tax on base period income grants unusually favored treatment to firms enjoying large profits in the base period, including those firms whose profits are ordinarily large because of monopoly position. Yet the logic of a tax calculated on base period income is far more appropriate to the desire to levy upon the windfall profits of a war period than the sort of levy which is constructed on the basis of excess profits defined in terms of a percentage return on the investment in the enterprise in question. The latter

[1] C. Shoup, "The Taxation of Excess Profits," *Pol. Sci. Quart.*, vol. lv, pp. 535-55; vol. lvi, pp. 84-106; 226-49.

form is far more consistent with a policy designed to set up a permanent tax on high profits intended to serve primarily as an instrument for attacking the so-called "monopoly problem." There is considerable reason to believe that this is the underlying objective behind the current proposal to amend the excess profits tax so as to eliminate the option to use the base period income formula. To precipitate at this time a debate over the use of taxation as a device for trenching upon monopoly position seems distinctly unwise from a political and economic point of view. If, on the other hand, the object of the legislation is restricted to the taxation of war profits, Mr. Hicks's conclusion and the implicit support of the form of tax now in use in this country seems fully justified.

Mr. Hicks has a good deal to say concerning economic incentives during a war period. He is inclined to the opinion that at least during the early years of the war effort, care must be taken not to take away so large a percentage of marginal income as to dampen unduly the enterprise of the business community. This means of course an implicit condemnation of very heavy rates under the excess profits tax. Clearly the 100 per cent rate formerly in use under the British levy was ill advised and the substitution of a blocked account for the last 20 per cent of this rate was fully justified by Mr. Hicks's logic. It may well be, however, that he underestimates the need for a profit stimulus during the later years of the war effort. So long as any substantial body of policy decisions remains in the hands of private enterprise the wholehearted coöperation of the business community is vital for the war effort, and the complete or nearly complete elimination of the motive to which that section of the community ordinarily responds is dangerous from the point of view of the success of the war effort itself.

Mr. Hicks's chapters on the economics of the capital levy are well worth reading. They are in fact the first serious analysis of this proposal since the time of the Colwyn report. While the general result of his treatment is to reduce somewhat the fears which have become traditional concerning the possibility of financing the collection of a tax of this sort, the impression remains that a very real problem exists. The collection of a heavy tax would be a delicate operation at best and this counts seriously against its use during periods of great stress when nicely conceived devices requiring precise and deliberate administration are not apt to receive the attention which they deserve.

As we have already pointed out, this book is an important contribution. Invaluable as a source of information concerning the fiscal policy of today, it fills a major loophole in the general literature of public finance.

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158 THE AMERICAN ECONOMIC REVIEW [MARCH

The Economics of American Defense. By Seymour E. Harris. (New York: Norton. 1941. Pp. 350. $2.75.)

This volume is an essay in applying "the principles of economics to the problems of war and defense. It is both a tract on public policy and an exercise in economic principles" (p. 7). As an exercise in economic principles it examines the structure and functioning of a war economy; as a tract on policy, it analyzes the American defense program in the light both of its legacy from the depressed thirties and of its presumptive bequest to the post-war world of the future. While these two broad fields of interest are obviously interdependent, it is convenient to examine them separately.

In real terms the economic impact of war involves the attempt to maximize specific goods and services at the disposal of the state. The means whereby this is done include the centralized control of foreign trade so as to reduce exports and increase imports, the stimulation of output, the discouragement of consumption, the cessation of capital formation or replacement in non-essential industries, and the diversion to the state of the resources so freed (p. 55). In monetary terms, the problem involves providing the state with the dollars necessary to purchase the goods and services it needs by methods involving a minimum of dislocation, hardship and, above all, competition with the state for scarce resources. The existence of this financial problem has, in the past, tended to obscure the "real" problem just stated. Professor Harris quite rightly reiterates that fundamentally the financial problem is a secondary one, thus recalling the dictum of *The Economist* that the first charge upon financial policy is to see to it that nothing is ever decided upon financial grounds. Given the basic task—increase in output and diversion of resources—how can it best be accomplished?

To the extent that idle resources are available, they can be mobilized simply by bidding for them. For this reason, the extent of unemployment should be regarded as an important determinant of governmental policy (p. 50). But the existence of bottlenecks, the pressure for speed "beyond the system's ability to adjust real resources" (p. 139), and the immobility and specificity of many resources soon exert an upward pressure upon prices which brings the issue of price control to the fore. To the extent that inflation facilitates the expansion of necessary output and increases the income of the treasury, the author is not hostile to its appearance (pp. 149-50), although he recognizes the need for its control. The reviewer would agree that, for political reasons at least, some degree of inflation is all but inevitable in a war economy; that scarcely needs pointing out in the United States of early 1942. But he feels that there are two points to which Professor Harris could have given greater consideration and which might modify the conclusions reached in the volume under review.

The first has to do with idle resources. It has become semi-fashionable to accept increases in the quantity and velocity of money as long as these are matched by corresponding increases in output. Professor Harris correctly calls attention to the fact that, in such a process, prices begin to rise considerably before the point of theoretical full employment has been reached. This suggests that such a rise in prices may reflect inability to supply (the

bottleneck issue), and at once raises the question whether further price increases have any stimulatory effect upon output. Given time, the situation may adjust itself; but under the conditions of modern war, time itself tends to be scarce, and cannot easily be spared until self-corrective forces have come into operation. The author mentions in one or two places (*e.g.*, p. 73) the desirability of utilizing price increases as incentives. This presupposes a greater degree of mobility, and rapid mobility, than may, in fact, obtain, except in the very early stages of rearmament which by now have been passed. It also raises questions about the use which the recipients of increased prices make of their enhanced incomes, which obviously should not be spent in competition with the government for scarce resources. Given the state's need for resources, use of the price incentive as a mechanical rabbit would seem to be advantageous only as long as the rabbit is never caught!

This brings us to the second and more fundamental point, which has to do with the consistency of the classical price function itself with an economic war effort. High prices, traditionally, serve the twofold purpose of stimulating output and restricting demand. Once resources really become scarce, not only are the possibilities of expanding production reduced, but high prices may actually have a deleterious effect upon output. There is some ground for believing that, during the last war, certain marginal producers of copper and coal, brought into production by the prices then prevailing, actually drew resources (especially labor and transportation facilities), away from more efficient plants which could have used them to better effect.

The same ineffectiveness exists on the demand side. No government at war will ever let its demand for resources be restricted by the height of the prices it has to pay. And, apart from foreign trade, there is no limit to the *monetary* resources which a state can bring into the market. Civilian demand may be restricted by mounting wartime prices, but only to the extent that increases in wages, profits and other incomes fail to keep abreast of the increases in commodity prices themselves.

Carried to its logical extreme, the principles of war economics can be reduced to three basic procedures: people must be assigned tasks on the basis of national need, irrespective of differential financial incentives (this, of course, is done in so far as induction into the armed forces is concerned); individual incomes should be paid on the basis of need, irrespective of the occupation of the recipient; and the distribution of goods and services should take place under the complete administrative control of the state, irrespective of the means of payment in the hands of consumers. No nation has yet carried matters quite as far as this, which means that, as far as policy is concerned, the problem is even more a political than an economic one. The decision as to how "totalitarian" a modern democracy must become in order to wage war effectively will, and should, be based not only on the state of the budget, the severity of bottlenecks and the interrelationships among prices, but also on the state of public opinion, the urgency of the crisis and the anticipated ease of the projected post-war transition back to peace.

With respect to American policy, Professor Harris has many sensible things to say. The fact that the United States has become a belligerent since

the book was written requires certain modifications in detail but few in principle.

The defense program itself is examined against the setting of recent economic history and in the light of its rôle as "arsenal of democracy" which the United States was playing at the time the book was written. Parts of the section on the international position of this country may need revision if recent hints that the belligerent democracies are contemplating the pooling of their financial and material resources are ever carried through.

Some of the most interesting portions of the book have to do with the financing of the war and the control of inflation. In principle, the author discerns three stages in the transition to a full-blown war economy. (His suggested time table [pp. 175-76] needs revision in view of the recently announced war budget of fifty-six billions.) The first stage, characterized by the progressive utilization of hitherto unemployed resources, is accompanied by deficit financing, moderate tax increases and increased tax yields; the second is marked by continued deficit financing, increased reliance on taxation and the commencement of borrowing out of genuine current savings; while the third stage finds increased reliance upon consumption taxes and a proportionate decrease in the deficit in relation to total expenditures, even though, in absolute terms, the deficit may continue to increase. Professor Harris, wisely, is not an alarmist about the size of the debt, pointing out (pp. 314-17) that the extent to which it may become burdensome depends on other factors, such as the size of the national income, to which primary consideration should be given.

The most serious criticism of the American defense program to be found in the book is directed against its lack of integration. The responsibility for tax policy, monetary policy and price policy is concentrated in different governmental agencies, and each policy has been formulated more or less independently of the others. Yet the close interrelationship between prices, money and finances, income, consumption and, again, prices should mean that taxation, price control and borrowing are jointly moulded into a dynamic, flexible, over-all economic policy. The concluding chapter of the book is devoted to just this topic: a criticism of the defense program up to the early fall of 1941, with suggestions for its improvement.

The book is not an easy one to read. It is characterized by an attention to detail that sometimes obscures the underlying significance of the details themselves. But it is a mature treatment of the economics of *this* war; and, for readers in this country, at any rate, not its least valuable feature is its integration of the theory of war economics with a discussion of the applications of that theory to contemporary American problems.

George P. Adams, Jr.

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Paying for Defense. By ALBERT GAILORD HART and EDWARD D. ALLEN, with others. (Philadelphia: Blakiston. 1941. Pp. viii, 275. $2.50.)

The authors present an analysis of the problems of fiscal policy confronting the country in the national emergency. Upon the basis of this analysis, a positive program is constructed and its probable economic consequences indicated. Although the book was of course written before the United States became fully involved in war, its timeliness is not thereby seriously affected. The authors' estimates of revenue required must now be revised upward substantially; but what they have to say with regard to the objectives and methods of fiscal policy is as applicable now as before.

The primary objective of fiscal policy is of course to raise the necessary amount of revenue for defense needs. But the problems that are really troublesome are those involved in the choice of methods of raising the amount required. These are the problems with which the authors are mainly concerned. They list six objectives as of determining importance in the choice of methods of defense financing: (1) to maximize output; (2) to prevent an inflationary increase in the general level of prices; (3) to attain a distribution of burdens according to ability to pay; (4) to give everyone a sense of sharing in defense; (5) to release resources needed for defense; and (6) to promote, as far as possible, a healthy financial structure. By far the most stress is placed by the authors upon the second and third objectives.

A careful analysis is presented of the extent to which reliance may safely be put upon expansionary and non-expansionary borrowing, leading to a consideration of the volume and the methods of taxation which will be necessary and desirable to raise the required amount of revenue. Throughout the analysis, the emphasis is upon the necessity of achieving an equitable distribution of burdens and of preventing inflation.

In the program of fiscal policy which emerges from the analysis, principal reliance is placed upon the income tax, on the ground that the great increase in revenue required could most equitably be raised from this source. Hence it is proposed that a revenue of ten or twelve billion dollars should be raised by this tax during the year 1941-42, the increase in revenue from this source to be effected by lowering exemptions about one-half and by appropriate increases in rates. To make the tax more effective in checking inflation, it is recommended that the tax be collected during the year in which the income is earned, mainly through collection at source, and that the rate be varied, possibly as often as monthly, whenever variations in a cost of living index indicate either an inflationary or a deflationary tendency.

The general sales tax as a means of raising all or any part of the necessary additional revenue is rejected on the ground that our tax system is already regressive, that such a tax would tend to raise prices to consumers, thus providing a basis for demands for wage increases which would further the inflationary tendencies already operative, and that it would be relatively inefficient as a curb upon the spending of those in the high- and middle-income brackets. Excess profit taxes can probably be relied upon to raise some of the increased revenue required, but are regarded as relatively ineffective means in proportion to the amount needed. Excise taxes on goods whose

production conflicts with defense needs should be used to absorb the excess profits which otherwise might accrue to the producers of such commodities whose supplies have been restricted. The government should raise funds by borrowing only in so far as this can be done without prices rising. Every rise in the cost of living should therefore be accompanied, or promptly followed, by an increase in the income tax rate and a decrease in borrowing.

There will, I believe, be general agreement with the authors' stress upon the desirability of attaining a distribution of the burden of war finance in accordance with ability to pay, and upon the importance of having all taxpayers conscious of their contribution. Hence there also should be general agreement with the authors' preference for the income tax as that source of increased revenue upon which primary reliance should be placed.

Nor should any question be raised as to the desirability of levying sufficient taxation to block inflation. Here the authors' stress upon promptness of collection is also appropriate, and I find myself in agreement with them as to the importance of introducing collection at source to as great an extent as may be administratively feasible. I seriously question however the desirability, either from the administrative or from the economic point of view, of adopting the authors' proposal for frequent changes in the income tax rate. I am afraid that they underestimate the seriousness of the uncertainty, from the point of view of the taxpayer, that would result, and that they overestimate the feasibility of the use of simple statistical criteria as a basis for quick administrative action with regard to rate changes.

The authors also, in my opinion, have underestimated the possibilities of non-expansionary borrowing as a source of revenue in time of war. The heavy income tax which they propose, even though it be highly progressive, involves a very serious burden for the lower income groups. The even heavier tax which would now become necessary might involve an impossibly heavy burden for these groups. Even a highly progressive income tax will place more of the burden of financing the emergency upon the lower income classes than will a program of non-expansionary borrowing. It is true, as the authors point out (p. 82), that in the period of debt repayment spending power is likely to be transferred from the lower income groups to the higher income groups; but the authors fail to note that during the war period in which the debt is increasing, the use of non-expansionary borrowing in effect shifts some of the burden of war finance from the lower income groups to the higher income groups. With the burden of the war finance program as large as now appears likely, considerable reliance upon non-expansionary borrowing will not only be desirable but also probably unavoidable. Although the authors do devote some attention to the possibilities of compulsory loans, I am afraid they have failed to appreciate their possibilities to the full.

A minor criticism has reference to the argument in favor of excise taxes on commodities the production of which involves the use of resources required for defense purposes. The authors favor such taxes as a means of drawing off excess profits that otherwise might arise as a result of the restriction upon output. In effect, this proposal represents the use of excise taxes as a partial substitute for excess profits taxes, and to that extent the argument appears

sound; but it also represents the use of excise taxes as a means of rationing scarce goods. For if the excise tax on a given commodity is sufficiently high to draw off the whole of the increase in price which otherwise would result from the restriction in supply, then the tax must be sufficiently high to raise the price to that level at which the quantity demanded would be no more than equal to the limited amount of the commodity produced. This is a very inequitable method of rationing. Much more desirable would be the institution of price control and consumer rationing in the case of such commodities.

Readers of the book will appreciate the clarity and brevity of the authors' exposition. They will also admire their courageous, and on the whole, cautious and helpful use of available statistical materials.

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American State Debts By B. U. RATCHFORD. (Durham: Duke Univ. Press. 1941. Pp. xviii, 629. $5.00.)

An encyclopedic review of the past experience of our states in the exercise of their credit and an attempt to deduce therefrom helpful conclusions to guide them in their future borrowings are presented in *American State Debts*. Two-thirds of the book are devoted to a chronological account of the development of state borrowing from the colonial period to the present time; one-third deals with current problems and suggestions for their solution.

A sharp contrast is drawn between the debts incurred by the colonial governments and the states prior to 1800, which were comprised largely of paper money issues and debt certificates of irregular amounts, were largely "forced" in character and were incurred for the financing of wars and operating deficits, and the debts incurred after 1800, which took the form of regular negotiable bonds, were voluntary in nature and were used mainly to finance capital outlays.

The course of modern state borrowing, which really began in 1820, is divided into five periods. The first, running to 1840, was concerned with internal improvements, such as the construction of canals, turnpikes and railroads and with the organization of state banks, and is shown to have been a failure in the sense that it ended in widespread deficits, repudiations and financial losses to the states. The second period (1845-1860), similarly characterized by borrowing for internal improvements, is shown to have been a somewhat lesser failure, due to the greater care exercised by the officials in the selection of the projects to be financed by loans. The appraisal of the results of these borrowings follows the traditional financial pattern. No acknowledgment is made of the fact that these borrowings, even though they had resulted in losses to the treasury, might have conferred benefits on the community nonetheless.

The nature of the constitutional restrictions on state borrowing adopted toward the close of the two periods mentioned, under pressure from irate taxpayers, is described, but unfortunately the political and social implications

of these restrictions are not brought out as clearly as they might have been. No suggestion is advanced, for example, that the complete prohibition embodied in many of these restrictions on the contraction of any debt by either the legislature or even the electorate itself, for any purpose except the suppression of an insurrection, might have been unwise in that it closed the field of internal improvements to the state governments concerned completely for many years to come, leaving this field to be exploited solely by private corporations interested merely in earning profits. The abuses of state credit during this early period are evaluated too much in terms of present-day standards and not enough in terms of the general speculative setting which characterized all economic operations of this time.

The third period of development of state borrowing, associated with the financing of the Civil War, is deemed to have been partly unsuccessful, inasmuch as it was attended by inflation and, in the case of southern states at least, also repudiation. The fourth period, associated with the borrowings of the southern states, under gang rule, during the Reconstruction Era and similarly culminating in a series of defaults, is admitted by the author not to have been a "fair example of state borrowing."

Having reviewed these somewhat unsavory pages in the history of the American state debts, the author turns to the modern (fifth) period of their development, running from 1910 to 1940, and characterized by borrowings of a multi-purpose nature. The author is loath to admit the greater orderliness of state borrowing during this period and its basic difference from the unfortunate earlier experiences of the past. He takes the position that "it is still too early to formulate a final evaluation of this period, for most of the loans have yet to be repaid," thus indirectly suggesting the possibility of new state repudiations and defaults. He is willing to admit that the borrowings for highways and unemployment relief of this period have been socially worth while. But he believes that the loans for veterans' bonuses and the debts incurred by some western states for the establishment of systems of rural credit, after the collapse of farm prices in 1920-1921, have been unjustified, and he withholds judgment as to the worthwhileness of the loans contracted for other purposes. It is not clear to the reviewer wherein these other loans, which have comprised such projects as grade crossing elimination, bridges, state parks, additions to university buildings, hospitals, aid to public housing, harbor improvements, development of water supplies and reforestation, have been less desirable than borrowings for highways or unemployment relief.

State officials are taken to task for having neglected to use during the 1920's the callable type of bonds, which eventually would have saved their states considerable sums in interest payments since these bonds could have been refunded during the 1930's when interest rates dropped sharply. The fact is overlooked, however, that no one even among the experts advising the officials anticipated at the time the occurrence shortly of a sharp break in the interest rates or advocated the use of this type of bonds. The underwriters, who were an important part of the market, as the author admits, were adverse to its use. In the light of this, it is not clear how the officials

could have done otherwise than to adhere to the more traditional forms of borrowing. The experience of the 1930's should serve as a lesson for the future to all state and municipal officials and students of public finance regarding the advantages of introducing greater flexibility in the terms for which bonds are issued, but it certainly does not demonstrate the lack of foresight on the part of any particular group of individuals.

The section on current problems is opened with two case studies—those of Arkansas and Tennessee—which bring clearly to the fore the evil consequences of the failure by a state to plan carefully its borrowings and debt repayments. This is followed by a discussion of constitutional debt limitations, which, unfortunately, is too descriptive and not sufficiently critical in character. The author should have considered at this point the pros and cons of these limitations. Instead, he limited himself merely to a statistical comparison proving that constitutional restrictions restrict borrowing. Next comes a review of court interpretations of these limitations, and of the remedies left to bondholders to secure the enforcement of state loans; and a survey of some of the dangers involved in the unrestrained use by states of the "limited obligation" type of bonds, commonly known in the market as "revenue bonds." In a chapter devoted to the present geographic distribution of state debts, their concentration in the Northeast and Southwest is pointed out. This concentration is explained by the greater maturity of these regions, the poverty of the southern states, and the special prominence of "machine politics" in some of them.

The economic effects of state debts are treated in a chapter of only some seventeen pages. The discussion is rather academic, bears little relation to the rest of the book, and is confusing. The disadvantages of state borrowing are emphasized, while the advantages are slurred over. Borrowing is said to promote extravagance, inefficiency, graft, and irresponsibility among officials and overconfidence among citizens generally, and to create false booms. It tends, according to the author, to generate more borrowing and, by producing a heavy debt burden, to rob the state of its freedom of movement and ability to meet new emergencies. Eventually, by necessitating large repayments, it is said to exercise deflationary effects on business. The only real advantage seen in borrowing is that it makes possible the execution of activities on a large scale, but even with respect to this advantage, some limiting factors are suggested. No distinction is made between the economic effects of well-controlled borrowing and those of loose or excessive borrowing. Yet such a distinction would have been exceedingly serviceable in view of the recommendations made in the concluding portion of the book for the liberalization of the existing constitutional debt restrictions and a better planning by the states of their borrowing generally.

The plea for a liberalization of these debt restrictions is based mainly on the argument that they are being evaded through the issuance of revenue bonds. This plea would have been more convincing, and also more in accordance with the facts, had it been based upon a demonstration that state loans, when well planned, can confer immense advantages on a state; that such a planning of them is scarcely possible under the existing debt limitations, and

that there exists today in many of our states, as a result of a complete overhauling of their administrative machinery in recent years, the competence necessary for making effective such planning of the use of their credit.

The author recommends the conferring on the state legislature of a power to incur debt up to an amount equal to the annual current revenue of the state during the preceeding five years, with a power for the electorate to borrow, by a special referendum in each case, up to another such sum, and for the legislature, in the event of a proclaimed emergency, to borrow up to an additional 50 per cent of such amount. Thus, the aggregate debt limit applicable to normal times would amount to 200 per cent of such average current revenue, and for emergency times, to 250 per cent of it. In addition, debts of self-supporting enterprises would be made completely exempt from the debt limit. These are sensible proposals. Except for the fact that the limits are to be based on the average current revenue instead of on the average assessed valuations, they follow to a large extent the arrangments which have been in effect for many years in the case of municipal borrowing and which have operated there with reasonable satisfaction. The substitution of current revenue for assessed valuations, as a basis for the limitation of state debts, is logical inasmuch as state revenue (on which the ability to take care of the debts rests) is derived mostly from other sources than the property tax.

The final section of the book is replete with excellent recommendations. The states are urged to proceed slowly with the exercise of their credit. Many of the mistakes of the past are laid, quite rightly, to excessive haste in the authorization of the loans. Great emphasis is placed on the need for establishing capital outlay budgets and long-range financial planning, the financing from current revenue of at least a small portion of the cost of each outlay as a "down payment," the shortening of the terms of bonds to 25 years, the use of callable bonds, and the resort to state borrowing mainly during periods of depression.

These excellent recommendations, however, would have been more forceful had they been supported more fully with confirming opinions from the existing literature on the subject and references to the successful experimentation with some of the proposed devices by the more progressive states and municipalities in recent years. In general, the book suffers from an insufficient emphasis on the improvements introduced by the states in their borrowing practices in recent times and from a failure to indicate clearly that most of the abuses of their credit took place in the distant past. A reader who has been told that "it is not feasible to make any general statement as to whether the states have, on the whole, realized a net advantage from their borrowings" (p. 583) will find it difficult to follow the author's recommendations for a broad liberalization of the existing limitation of state debts. This statement, in the reviewer's judgment, has some semblance of correctness only if the unfortunate but really irrelevant experiences in state borrowing of one hundred years ago are indiscriminately lumped together with the more fortunate and relevant experiences in such borrowing of modern times.

But, despite these shortcomings, the book is to be commended as a piece of formidable research and first-rate scholarship. It is profusely documented

and will be of great value to persons interested in state bonds as an investment, officials concerned with the management of state debts, and students of public finance generally. It is written simply and clearly and should exercise a wholesome influence upon the future course of state borrowing. Its appearance at a time, when, because of a preoccupation with national defense, a lull in state borrowing is setting in, is especially appropriate. This temporary relaxation in state borrowing should afford an opportunity to the officials concerned to perfect the arrangements necessary for the exercise by their states of their credit more intelligently and effectively during the next period of efflorescence of internal improvements and state participation therein, which is likely to follow on the heels of the present defense period.

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Money and Banking; Short-Term Credit

Money in Motion; the Social Function of Banking. By A. C. HOLDEN. (New York: Harper. 1940. Pp. vii, 242. $2.50.)

The author, for twenty-five years an architect engaged in large-scale house construction, was impressed by the imperfections of long-term finance in the industry. He is convinced that dislocation, unemployment and depressions are largely, if not completely, due to the lack of a reorientation in the capital goods enterprise. The heart of the problem lies in striking a balance between production and consumption, between the cost of capital goods and the continual revenues derived from them. Long-term finance must learn to amortize long-term debts out of the utilities thrown off by the capital produced: witness such instructive instances as toll-bridge finance, installment buying and house rentals, where gradual payments measure the succession of utilities and alike provide the means of liquidating the long-term credit which gave birth to the durable agents.

Long-term finance is to borrow a page from the ideal conception of short-term credit extension. The commercial banker is not, or should not be, a mere merchant of money, ready to lend so long as "collateral" is provided. He is rather supposed to judge the supply and demand for the goods of the producer seeking accommodation; and a grant of bank credit is to symbolize that the production of the goods is justified by the market conditions. A similar conception ought to govern long-term credit for capital goods. To allow savings alone to determine the course of investment is to give hostages to fortune, for a disparity exists between the ebb and flow of savings and the fluctuating requirements of funds for capital formation with solvency and stability as the paramount objectives. The dislocations are compounded by the profit motive and high rates of interest as the arbiters of investment.

These criteria of allocation do not guarantee the equation between cost and utilities and above all the liquidation of the long-term credit involved.

What is needed is a Capital Reserve banking system, not unlike the Federal Reserve system in structure, embracing all the saving and investment institutions in the projected districts. It will be the function of the new institution to extend long-term credit, beyond the pool of savings if need be, at varying but low rates of interest. The master purpose will be the mitigation of depressions and the flattening and lengthening of the business cycle generally, by employing idle productive forces and by redirecting resources to new employments. The guide will be, not primarily profit and interest, but careful study and planning and an effort to match potential demand with new projects.

The significance of the book goes beyond the central thesis, which possesses flaws obvious to the student of economics. The author is a fine example of what college presidents have in mind when they talk of a liberal education. The book combines a pleasant style and a wide-ranging view with a tolerant attitude to social critics and reflections on social psychology. The nature of banking, of hoarding and saving, of installment buying, and of amortization are expounded with uncommon pedagogical skill. It is a good book for the business man because it opens new vistas, points to new responsibilities, and paints the function of business on a broad canvas and with perspective.

M. M. Bober

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The Security Affiliates of National Banks. By W. Nelson Peach. Johns Hopkins Univ. stud. in hist. and pol. sci., ser. lviii, no. 3. (Baltimore: Johns Hopkins Press. Pp. 187. $1.50.)

The 1941 addition to the Hopkins studies in historical and political science describes at some length financial developments of the twenties which led to a decline in importance of that aspect of banking which long has been regarded as strictly commercial. During that same decade investment banking was enjoying an era of unprecedented prosperity. As the effective demand for good commercial loans declined banks were forced to invest an increasingly large percentage of their funds in securities and to make loans in large volume secured by stocks and bonds in the process of distribution or being used currently as media for speculation by the banks' own customers. As these phases of their activities grew more important large metropolitan banks found it necessary to develop bond departments and to keep in close contact with all aspects of the securities business. The way was thus paved for banks to enter the investment banking business in spite of limited powers in this field. In an era so reckless and speculative it would seem strange indeed had the device of the security affiliate failed to make an appearance.

Using as his principal examples the security affiliates of the Chase and the National City banks, the author describes the abuses growing out of the affiliate system. Most of the resulting evils might have been eliminated by corrective and regulatory legislation; yet there would still remain the funda-

mental defect—mixing the commercial and investment phases of the banking business.

Since security affiliates have been abolished presumably permanently, the study is valuable principally to students of financial history. For a work so scholarly and so well documented it makes unusually interesting reading, for it throws considerable light on business and banking standards of an era now dead but never to be forgotten.

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International Trade, Finance and Economic Policy

Inter-American Solidarity. By WALTER H. C. LAVES, editor. Lectures on the Harris Foundation. (Chicago: Univ. of Chicago Press. 1941. Pp. xiii, 228. $1.50.)

This volume of seven assorted essays is typical of the repetitious parade of writings in the last two years which has served very little to advance realistic understanding of the economic issues of inter-American policy. Professor Upgren's presentation, in the section on "Raw Materials and Inter-American Solidarity," is substantially a reiteration of the thesis and facts given by him in collaboration with Professor Bidwell in an article in January 1941. Twenty of the fifty pages in the section on "Inter-American Trade and Financial Problems" are consumed in expounding a naïve theory of international investment. To this the remaining discussion appends some considerations respecting the Latin American position, leading to a series of "Conclusions," the tenor of which may be judged from numbers one, three, and nine: "1. As a natural and inevitable result of economic laws, whose workings are beyond her control, the United States is bound to export capital. . . . 3. Owing to reasons dictated by her own internal economy, and also to conditions prevailing today in international trade, the United States must inevitably export capital to Latin America. . . . 9. The past experience of British investment in the United States does not seem to confirm the fears that Latin America may become an economic rival of the United States." The three sections entitled "What Have the Americas in Common?" "Cultural Relations Among the American Countries," and "Pan Americanism and the World Order," are largely rhetorical, and the first of these is marred by several careless generalizations. Major Eliot expounds in the fashion of a formula his well-known ideas on modern warfare in his section on "The Strategy of Hemisphere Defense." Professor Frank Scott's contribution, "Canada and Hemispheric Solidarity," on the other hand, is thoughtful, substantial, and attentive to neglected questions.

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Business Finance; Insurance; Investments; Securities Markets

Investments. By GEORGE W. DOWRIE and DOUGLAS R. FULLER. New York: Wiley. 1941. Pp. viii, 631. $4.00.)

Many textbooks on investment have a serious defect. They either cover a wide range of material properly covered in other undergraduate courses or they give primarily a generalized financial survey of subjects. It is not enough for a course in investments merely to generalize on background material and financial analysis. The student should be taught how to administer an investment fund. This entails a knowledge of fundamental problems and forces in investment, the significance of investment policies and plans, and the evaluation and selection of specific securities. *Investments* by Dowrie and Fuller has accomplished this job for the student in a very satisfactory way.

Although the book covers a wide range of material on investment, the treatment of the subject, on the whole, is conservative, timely and effective. The book is well balanced, its organization is good and the presentation is clear. It is quite evident that the authors have a good background in economics and practical investment plus the ability to present their information in a compact, satisfactory text.

The authors state that the book is designed "to present principles applicable to all forms of investment and to introduce the reader to the major problems which each of the more important special aspects of the subject presents." This purpose is accomplished to a substantial degree. The book is not primarily a treatise on the technique of investment. More largely it emphasizes and analyzes the fundamental forces creating the hazards of investment, the principles and criteria determining investment values, and the need for an investment program.

The book begins with an introductory setting of three chapters wherein the nature of investment is presented, an historical perspective of the problem is given, and the supply of and demand for capital is analyzed. Part II, "The Mechanism of Investment," comprises four chapters dealing with bonds, equities, investment banking, and the security markets. There is nothing new in these chapters either as to subject matter, organization, or method of treatment. This is important material, however, for students beginning the study of investment. It is also very helpful to general readers unfamiliar with such subjects. In Part III, "Investment Policy," four chapters are devoted to the risks of investment, primarily those arising through external influences such as cyclical changes, changes in purchasing power, and changes in money rates. Five chapters are given over to investment policy, individual and institutional. One chapter is on governmental protection and regulation, in which also is discussed "the vital part taxation may play in the determination of an investment program." There is important material in this section which will help the student or investor to understand the need for an investment program. But before a sound investment plan can be formulated it is essential to have an understanding of the various forces which may affect investment

policies. The survey of institutional investors is short but it gives a good idea of their nature, fundamental investment problems and how they have been met.

The fourteen chapters of Part IV on "Investment Analysis" take up nearly half the book. One chapter is included on sources of information. Financial statements are explained in two chapters. The chapters on selection of investments—on which the major emphasis of this division is placed—include general considerations, corporation bonds, civil obligations, real estate and real estate obligations, and common stocks. Here investment analysis is employed for the purpose of providing the investor with a sound basis for determining investment values. There is presented the fundamental elements in the appraisal of each type of fixed income obligation. The methods of analysis are clarified by concrete illustrations in which actual companies are examined. Common stock selection is predicated upon the investment analysis approach. Specific factors are examined and individual companies are studied to illustrate the process of selection.

Part V is a single chapter of thirteen pages on investment advice and management. Here is a concise and fair discussion of professional investment management, and the problem of managing one's own funds.

Certain aspects of investment are omitted or receive inadequate treatment. Inflation is treated incidentally in the chapter on the purchasing power risk. War as a factor in investment is only mentioned. A chapter is given to the stock exchange, but security speculation is omitted. There is no mention of the mathematics of investment. There are very few footnotes and no bibliography, questions, or problems.

While the book has its weak spots, it has so many good points that we may consider it a real contribution as a text for those working in investment.

N. Gilbert Riddle

Ohio State University

The Regulation of Stock Exchange Members. By Raymond Vernon. (New York: Columbia Univ. Press. 1941. Pp. xvi, 152. $2.00.)

The scope of this concise treatment of the regulations of stock exchange members is limited to the various aspects of broker-dealer-specialist transactions. Despite this limitation the area remains large, and it is surprising to find the material covered so adequately in a small monograph. The author has done an excellent job of balancing the discussion of the many topics covered and of stating the essential points clearly.

This is not another treatise on the economics of stock exchanges; the subject enters only incidentally into the discussion. Instead, the book might be described as an exploration of the logic of exchange member regulation. The principal emphasis is on the aims of regulation, and on the confusion generated by certain rules which work at cross purposes.

The first and fifth chapters are very brief. The first states the "aims" of regulation but not in any detail. The author has merely listed certain claims for and against exchange trading, and indicated some of the difficulties of

regulating transactions involving member interest and the public interest. The fifth and last chapter contains general discussion of such phenomena as "fair" markets and "orderly" markets, and is based on S.E.C. and Senate reports and hearings.

The main part of the work, chapters 2-4, is devoted to the following broad topics: (1) regulation of lending and borrowing activities of brokers; (2) regulation of broker and dealer activities of the specialists; and (3) regulation of members' transactions as dealers, other than as specialists. In each of these sections the method followed and the type of material presented are essentially the same. The chapter devoted to regulations of lending and borrowing activities of brokers may be used to illustrate the general plan of this work.

Some attention is first given to the historical development of restrictions on lending and borrowing activities of brokers beginning with the scanty material available for the period of crisis in 1907. The Hughes investigation, the work of the Pujo Committee, the developments of the twenties and early thirties, are briefly discussed as they relate to member borrowing and lending. The later regulations, imposed by the Federal Reserve Board and the New York Stock Exchange, are outlined and analyzed in much more detail and some of the reasons, real or merely apparent, are advanced for the various rules which became effective in the period 1934-40.

The second part of this section, outlining some of the quantitative materials available regarding member borrowing and lending, provides little new information. The final part of this section is a summary and appraisal which does contain some interesting points. The summary is of particular interest because the author has clearly indicated various conflicting aims which are embodied in the regulations, and he has marked out definite aspects of member borrowing and lending activities about which very little is known.

The other two main sections follow much the same pattern.

This volume does not present much that is new but it does bring together in clear, concise language the general framework of exchange member regulations and supplements what has been done in this field with well-selected materials drawn from many sources. The principal contribution is the emphasis on the conflicting aims of individual rules governing exchange members, on the need for clearly formulated policies, and on the need for much more factual information than has yet been secured.

FRANK P. SMITH

University of Rochester

Assekuranz-Jahrbuch. By S. J. LENGYEL, editor. 2 vols. (Basel: Verlag für Recht und Gesellschaft. 1941. Pp. 642; 540.)

This insurance yearbook, founded in the year 1880 by A. Ehrenzweig, is the oldest annual on this subject. Moreover, it is the most international publication of its kind, since it shows the statistical development in twenty different countries and contains besides an international bibliography of

private insurance in general, embracing all branches of insurance in twenty-three countries. Most of the space is devoted to new legislation, the second volume treating exclusively legislation in the United States during 1939 and 1940. It would be a great loss to insurance theory and practice all over the world if the sixtieth edition of the yearbook should be the last one, as seems possible. The present editor, formerly of Vienna, had to leave Europe and is now in Australia. Instead of being published in Austria as has been the case for the last fifty-nine years, it was necessary to publish this edition in Switzerland. Probably because of the characteristic difficulties of scientific publications within formerly independent European countries, the traditional first part of the yearbook containing scientific papers on insurance economics and administration has almost vanished. Should not America see that such an international publication survives?

ALFRED MANES

Indiana University

Public Control of Business; Public Administration; National Defense and War

Government Control of Business. By HAROLD D. KOONTZ. (Boston: Houghton Mifflin. 1941. Pp. xi, 937. $4.50.)

Government and the American Economy. By MERLE FAINSOD and LINCOLN GORDON. (New York: Norton. 1941. Pp. xvii, 863. $3.90.)

These two volumes represent substantial new additions to the growing list of texts for use in survey courses in "government and business." Although similar in general scope they differ considerably in approach, level of exposition, and emphasis. On the whole Professor Koontz's book is more conventional in approach, as is suggested by the title itself. In a brief introductory consideration of the problem of public control, he sketches the ebb and flow of governmental participation in economic life from early times, and describes the characteristic economic and legal institutions that constitute the setting of the contemporary problem of public control. The remaining seven parts of the book deal with government intervention in various segments of the economy, including transportation, public utilities, "private" business and trade, financial and exchange institutions, extractive industries, and labor. Consideration is given also to the promotional activities of government, and to the rôle of governmental enterprise. The book thus covers, in brief, the substance of a half-dozen upper class courses in sequence; the thread linking the several parts is that they each manifest, in one way or another, the common phenomenon of "government control."

In *Government and the American Economy* Professor Fainsod and Mr. Gordon have undertaken to survey an equally broad terrain. They, however, have organized their material in terms of the varying character, extent, and objectives of governmental intervention in the economic life of the community,

rather than in terms of a classification of "industries." They begin with an introductory description of the structure of the modern economy, and of the "political" organization of different economic groups, including business, labor and agriculture, emphasizing the rôle of these pressure groups in the functioning of modern government. The three remaining parts of the book deal, in turn, with government as a promoter of particular economic interests, government as regulator in the public interest, and public enterprise and conservation. Part III, dealing with government as regulator, covers substantially the same groupings of industries as are treated by Professor Koontz.

In this connection certain interesting differences in emphasis are apparent. Professor Koontz, for example, devotes nearly a third of his book (three hundred pages) to transportation and public utilities, business traditionally "affected with a public interest," and approximately half as much space to regulation to enforce competition and the control of specific industries such as coal and oil. Professor Fainsod and Mr. Gordon, on the other hand, place much less emphasis on transportation and public service industries, and much more on antitrust and trade practice legislation, the activities of trade associations, and our experience with N.R.A.

Especially interesting is the difference in emphasis accorded to the N.R.A. and subsequent experience. To Professor Koontz the N.R.A. was an "interesting, but happily short, experiment with the use of the code device for widespread business regulation," to be disposed of in two scant pages as an incident to the discussion of the control of competitive practices. Professor Fainsod and Mr. Gordon have treated it at very considerable length as a case study in industrial self-regulation under the aegis of government, and as such of permanent significance, quite apart from the situation that called it into being. Here, as elsewhere, they have brought into the foreground the grave problems of political organization and administration involved in any large-scale attempt at governmental control of or participation in the conduct of business.

Both volumes end with chapters that attempt an appraisal of the rising tide of governmental intervention in economic life, and of the possible alternatives of public policy. Professor Fainsod and Mr. Gordon are diverted, however, in the midst of their summing up, to a consideration of the impact of war upon the economy, and to a description of the measures for effecting the transition from peace to war. The treatment of the problem is brief, to say the least, in comparison with its contemporary significance, and gives the appearance of a hasty addition, not well integrated with the remainder of the book, or even with the general discussion of public policy, with which it is conjoined.

Both volumes have drawn heavily on the wealth of material made available in recent years through the publications of the T.N.E.C., the National Resources Committee, and other governmental and private sources. Both reflect, in considerable measure, the influence of the past decade of development in economic theory as applied to market phenomena and business behavior, although the employment of these tools has not been as thorough-

going as might be desired. Both stress the institutional developments of the past three-quarters of a century that have led to and conditioned the extension of governmental participation in economic life. Professor Fainsod and Mr. Gordon, however, have emphasized in greater measure the gradually increasing importance of newer objectives of public policy—the promotion of business recovery and stability, the attainment of a higher level of employment and national income—that have come to supplement the maintenance of equity as a basis for governmental intervention. They nevertheless have not undertaken to include in their discussion those monetary and fiscal measures by which also the government may seek to achieve these objectives. The relation of public works and other relief measures to economic recovery and stabilization is suggested, but the underlying theory is not expounded or subjected to critical analysis. Thus *Government and the American Economy* remains a partial treatment of the interrelations of government and the functioning economy; it could, indeed, scarcely be otherwise within the limits of a practicable book.

To the teacher in search of a textbook each of these volumes will appear to have points of strength and weakness. Professor Fainsod and Mr. Gordon have assumed the student to have a quite considerable background in recent American economic history and a familiarity with economic, political, and legal concepts and processes. They have almost completely eschewed definitions of terms except as these may be suggested by the context. This assumption that the reader will appreciate the full force of an allusion to industrial unionism, the injunctive process, or the English common law undoubtedly contributes to an easy and perhaps flattering style, inasmuch as there is no appearance of writing down to the level of the uninitiated. Nevertheless it may make many passages appear cryptic to many students, and doubtless will put on the teacher a considerable burden of supplementary exposition. And one need scarcely be a pedant to wince at the recurring use of nouns in such Teutonic adjectival combinations as "pre-World War I British industry." Professor Koontz, by contrast, assumes relatively little prior equipment on the part of the student, and endeavors to supply the relevant background himself. Although his book as a consequence seems more "textbookish," his careful, clear and systematic treatment is far from devoid of reader interest.

These volumes, formidable in length as they are, nevertheless still involve in considerable measure the inevitable sacrifice of depth of analysis in the attempt to cover a broad range in a single text. Much space must necessarily be devoted to the enormous mass of legislation and machinery through which governmental control is articulated, and little room remains for the detailed presentation or critical analysis of specific problems. In Professor Koontz's volume, for example, the patent question is disposed of in a half-dozen scattered pages, as are also the economic and legal aspects of resale price maintenance; the open price system and the basing point system are accorded four pages each. Substantially similar in extent is the coverage of these representative issues in Professor Fainsod's and Mr. Gordon's volume.

Despite the inherent difficulties of any such attempt at broad coverage this reviewer has been impressed by the very considerable amount of detail

that the authors of both volumes have been able to include in their panoramas without sacrificing general perspective or becoming mere cataloguers of facts. It is difficult to see how much more could have been accomplished within the limits of available space.

A. M. McIsaac

Princeton University

Industrial Organization; Business Methods and Policies

Top-Management Organization and Control. A Research Study of the Management Policies and Practices of Thirty-one Leading Industrial Corporations. By Paul E. Holden, Lounsbury S. Fish and Hubert L. Smith. Conducted under the auspices of the Graduate School of Business, Stanford University. (Stanford University: Stanford Univ. Press. 1941. Pp. xvii, 239. $4.00.)

One cannot appraise this book without giving careful consideration, at the outset, to the special circumstances under which it was written. Essentially, it is a report upon a comprehensive and ambitious research project on the business practices of modern American corporations. The value and the limitations of this study are strictly circumscribed by the special plan under which it was developed. Its findings will be of interest to those concerned with the technical structure of American management, but will be of limited value to those persons who desire to know how business men reach decisions on those vital issues concerning labor, the federal government, the public, and industry generally.

In the Preface, the Dean of the Business School of Stanford University states that "after several months of study and discussion, during which time leading executives joined with members of the Business School faculty about the conference table, a broad program was formulated and the project undertaken." It was conceived that this would not be an "academic" study, but would realistically show ". . . how policies are formed, how authority is delegated, how control is effected, how departmental or divisional points of view are harmonized, how results are measured, how extravagant practices are corrected, and how waste is eliminated."

A group of thirty-one "nationally known well-recognized industrial companies were chosen" for study and some of the companies assisted in the financing of the project. Data sheets were designed to gather information which would give "comprehensiveness and comparability." The field work for the collection of the data required over seven months and an additional six months were required to "analyze and coördinate the vast amount of material obtained." The report relates to American big business. The thirty-one corporations studied had assets of over 8 billion dollars, or an average of about 260 million dollars per company. They were largely industrial, banks, merchandising organizations, public utilities, and railroads being omitted.

The research project was carried on under at least three important limitations, which are stated in the Preface, and a clear recognition of them is indispensable to an understanding of the book. These limitations—the anonymity of the corporations and their practices, the absence of any discussion of the factor of personality, and the indisposition to evaluate or criticize—obviously place a great barrier to a realistic approach of the manner in which American industry is directed.

It was further assumed that the basic facts relating to American management policies and practices could be ascertained exclusively from the data gathered by the research project. This apparently is the reason why one finds no reference at any point, either in the text itself or in the appendix, to any of the mass of literature relative to this general subject which has accumulated in the government and in schools of business and social science.

"Top-management" is variously defined in the book. It means, essentially, the central management of modern American corporations through the board of directors, the officers who actively direct the corporation, and finally the departmental heads of the various branches who carry out its work on a day-to-day basis.

A specific illustration of the inherent difficulties under which the report was made is found in a consideration of the function of the board of directors. On page 17 we find the following statement: "The point of view of the board of directors must . . . be identical with that of the stockholders. . . . In fact the fundamental concepts of the first zone or level of management (the directors) is management for the benefit of those who own the business." This is a clear statement of the classical, and normally accepted, obligation of directors to stockholders. But the authors go on to point out that "this point of view is not always easily maintained. Many directors are also full-time executives whose interests as members of management may momentarily be at variance with those of the stockholders."

Following the identification of this general problem, it might be expected that some conclusion would be drawn from the experience of the corporations in question. No opinion whatever is expressed on this vital point. In fact, the remainder of the material regarding the board of directors is primarily devoted to a discussion of the mechanics of its organization and the board's relations with the managing officers in the corporations. Nowhere is there even a hint that the present organization of, and control exercised by, the board of directors of any one of the thirty-one corporations is ever at variance with the interest of stockholders.

The second zone of "top-management," as outlined in the volume, is that of the "general management or administrative function." This general management is in the hands of those persons, largely company officers such as vice presidents, who exercise ". . . an active and continuous function involving the initiation, formulation, coördination, and development of . . . proposals and results." Here one finds considerable material which would prove helpful to those interested in the technique of structure and organization.

It is at this level of management that the major policies of the corporation are outlined, and the major decisions regarding them put into effect. However,

because of the inherent limitations of the project outlined above, one again notes the lack of what might be termed a realistic approach to the problem. Management is made up of men, acting alone or in unison. Their business decisions are not reached in a business vacuum but under concrete and specific circumstances. One of the stated objectives of the book is to ascertain "how policies are formed." This objective has not been reached.

The third zone of "top-management" is seen as the "divisional—or departmental-management function." The definition of the function and responsibilities of the managers in this third zone, with the description of their organization and control, is one of the best features of the report, primarily because it is in this zone that the day-to-day business work is done. Here are carried out the policies which have already been established either by general management or by the board of directors. The limitations inherent in the project, as discussed above, are least confining at this juncture.

Following its description of the structure of the three zones of management, the book discusses at considerable length the types of controls exercised by "top-management" over the various functions of the corporations, for example, the practices followed in the control over costs and capital expenditures. In addition to discussion of these familiar techniques of control, there are sections of special interest devoted to the controls over organization, research, line of products, and other aspects of the operations of modern corporations, including an interesting account of "Control Over Demands Upon Executive Time" (Part C, Section 16).

The report fails to consider adequately four of the most vital problems confronting American business: its relations with labor, with the industry in which it operates, with the government, and with the public generally. One is surprised to find, for example, that in the Index there is no reference at any point to labor or to unionization. On pages 130-141 there is a section (Part C, Section 6), entitled "Control Over Wages," with a detailed discussion of wage policies, job evaluation procedure, and control procedure as evolved by management. But at no point here is there any reference to the rôle which organized labor now plays in the establishment of wages. It is interesting to speculate on what the treatment of the wage problem would have been if the Business School had made this part of the study in coöperation with organized labor, rather than with business. The absence of any realistic treatment of the problem of wages is emphasized by the fact that there is no discussion of the relation of the corporation to organized labor. This is surprising in view of the fact that the locale of the corporations studied is largely the Pacific Coast which has been, for the last ten or twenty years, the focal point of a bitter feud between labor and capital.

The discussion of "Control Over External Relations," (Part C, Section 14), leaves the reader in somewhat of a quandary. The authors admit that "it is unfortunate that business in general has delayed so long the public presentation of its case, collectively and individually." Following this, two pages are devoted to the public relations activities of the thirty-one corporations. Most of the discussion is taken up by the quoted statement of one company regarding its attitude toward this important work. From this scanty material, the

reader is, of course, at a loss to know what, if anything, these corporations have done in this field.

In the same section there is a discussion, fourteen lines in length, of the relationship existing between the corporations and the respective industries in which they operate. It is stated that "most of the companies give positive endorsement to the collective study of common problems." In view of the importance today of the relationship of a company to its industry through trade associations, and the associated legal and legislative problems, this material is extremely skimpy.

As to the material regarding the relations of the thirty-one corporations to the federal government, it is to be noted that the study was begun in 1939, five years after the advent of the New Deal with its innumerable plans and programs for an extension of the power of government over private enterprise. Certainly these corporations must have taken action in this field meriting a consideration greater than the half page it is given.

These are some of the reasons why a student twenty years from now would find this volume of little assistance in illuminating the general picture of how American business actually operated in 1940.

Top-Management Organization and Control is a research study in the right direction. Stockholders, corporate officials, salaried employees, wage earners, the government, and the public all want more information from reliable sources about modern corporate enterprise. A beginning has been made in this study, but the emphasis has been given almost entirely to the mechanics of the management's structure. The result is a tentative blueprint of corporate organization and control.

The next step, and a much more difficult one, is to obtain the data, as far as possible, on how the structure actually functions. This material, in the opinion of the reviewer, can best be gathered by inquiring into how actual business decisions are made with respect to certain concrete and specific problems. A study along this line would feature the action of men, rather than the static outlines of corporate organization.

JOHN E. DALTON

New York

Mining; Manufacturing; Construction

The Automobile Industry. By E. D. KENNEDY. (New York: Reynal and Hitchcock. 1941. Pp. 333. $3.50.)

This popular account of the "coming of age of capitalism's favorite child" is by no means a scientific study in economic history or industrial organization; it sets out simply to sketch, in an interesting way, the beginnings of the motor industry and its progressive expansion to a predominant position in American economic and social life. The author has given a year-by-year, almost blow-by-blow account of the fortunes of the automobile producers, including many whose names come back like ghosts out of the past.

Although he has not essayed a scientific study of the industry, Mr. Kennedy nevertheless finds in its record, as compared with those of many other major industries, a striking contrast. During the past two decades, especially, there has been an increasing concentration in the industry, brought about, not through the merger of rival concerns, but simply through the failure and disappearance of independent manufacturers, many of which had, during the 1920's, been substantial and profitable enterprises. Thus, paradoxically, the automobile industry is today more completely dominated by the big three than is the steel industry by its major producers, yet the major motor producers have reached their position of dominance not through combination, but through progressive expansion of their sales relative to the entire volume. The end result is nevertheless the same: a situation in which price competition does not appeal to any of the major rivals as "good business," and in which the independents continue an ever more precarious existence.

Mr. Kennedy has been content to pose his paradox for the reader, without attempting an economic interpretation of the industrial history he has recounted. Indeed he points to the rise of Chrysler, under circumstances that seemed to spell inevitable failure, as an indication that the outcome was not a mere product of impersonal forces. But even though one assumes that the mortality of the independents was due to their failure to "have what it takes" in a period when the demand for automobiles as a whole was no longer rapidly expanding, one cannot help wishing that Mr. Kennedy had gone further in supplying economic answers to the question that he raises. Nor does the reader who is inclined to speculate find the book a very helpful source of information with which to proceed. For although it is studded with figures as to annual sales and profits, the data presented are not systematically organized or sufficiently inclusive to support further analysis without recourse to other sources of information.

A. M. McIsaac

Princeton University

The Iron and Steel Industry in South Africa. By C. S. Richards. (Johannesburg: Witwatersrand Univ. Press. London: Lund Humphries. 1940. Pp. lxi, 471. 25*s*.)

This work is an appraisement of the operations and pricing policies of the South African Iron and Steel Corporation during the period of five years after it began production in 1934. Incidentally it outlines the history of the whole industry in South Africa and describes the foreign sources of supply. "Iscor," the popular name of the Corporation, is a quasi-public enterprise which was organized by the Union government and financed to the extent of 90 per cent of its capital. During the period studied it controlled 92 per cent of the capacity for the production of basic iron and steel in South Africa. This was barely one-third of the domestic consumption, the remainder having to be imported mostly from Europe, with small amounts from the United States and occasionally from Australia. (This was the situation until September, 1939. What has happened since is an unwritten chapter.) Before 1934 some

97 per cent of the consumption of basic iron and steel in South Africa was imported, a considerable amount coming in the form of scrap used by domestic fabricators. Earlier experiments had indicated that ferrous products of standard quality could be produced in South Africa at a mill cost as low as that of the foreign mills, and thus would require no tariff protection. South Africa was an excellent nursery for the "infant industry."

The real owner of Iscor, the Union government, determines the tariff rates on iron and steel, and makes and administers the dumping laws; owning the railroads, it fixes the freight rates on iron and steel both inward and outward, and, strange to say, it aided Iscor to enter the European cartel although this raised the price of steel to South African consumers to the benefit of foreign producers. It has used all these means to make Iscor profitable, and it has been.

Iscor follows a basing point plan of a peculiar sort, the base price being the cost of foreign steel laid down at the ports of entry. As Pretoria, where the mills are located, is a non-basing point hundreds of miles from the coast, phantom freight is paid on most of the shipments. The largest monopoly-taxed buyer is the gold mining industry, which is located near Pretoria. Doubtless next in order is agriculture. These two are almost the only exporting industries.

The author is professor of economics in the University of the Witwatersrand and is one of the editors of the *South African Journal of Economics*. His work is a model of scholarly research into the problems of a very complicated situation. South Africa has been made a veritable laboratory of economic experimentation, and offers lessons of international import to students of infant industries, protective tariffs, international cartels, state socialism, and national planning. Even the discouraged liberal will be cheered by finding some awful object lessons which he may use to point a lesson.

FRANK ALBERT FETTER

Princeton University

Labor and Industrial Relations

Union Policies and Industrial Management. By SUMNER H. SLICHTER. (Washington: Brookings Institution. 1941. Pp. xiv, 597. $3.50.)

For many years there has been a shadow-land in the precise knowledge of certain aspects of labor relations. A good deal of hearsay, a few competent but fragmentary studies, and occasional rule-of-thumb observation has been the limit of the intellectual property of most labor economists in so far as the shadow-land is concerned. This misty territory has been that which encompassed the policies and plans whereby unions have sought to influence the entrance of new artisans to a trade, to control the system of apprenticeship, to influence the hiring and lay-off policies of employers, and to meet the problems of technological unemployment. The principal reason for the comparative dearth of systematic knowledge of these subjects has probably been

the enormous variety of policies involved, the deviations in practice from established rules, and the obvious difficulty of canvassing the facts of thousands of local situations. A single and comprehensive treatise on the subject had seemed virtually impossible. In the book under review, however, Professor Slichter has accomplished this most difficult task. He has accumulated and used an incredible amount of factual information, and to this he has applied a sound knowledge of economic theory and a generous portion of plain human wisdom. The results are, of course, not perfection; but they are little short of astounding. I have no hestitation in asserting that this book became the classic treatise in its field on the day of publication.

Professor Slichter has made good use of those fragmentary studies which preceded him, and to these he has added the results of a vast amount of original investigation. In his chapters on technological change, he has carried on and developed the justly famous pioneering of George E. Barnett. He has classified and organized a considerable volume of information on union attitudes toward labor-saving machinery, has analyzed these attitudes from a stable basis of economic theory, and has incidentally included a good portion of interesting labor history. Equally well, he has developed the early work of D. A. McCabe on piecework and timework, adding to those good but rudimentary studies an extensive array of up-to-date material. But in his chapters on union control of hiring and lay-offs, and on the control of cost differentials between union and non-union establishments, Professor Slichter has earned pioneering fame for himself. A careful collection of facts in research areas which have been greatly neglected, coupled with a splendid demonstration of the author's marked ability to classify facts, comprise a distinguished contribution to the knowledge of labor economics.

Unfortunately, the standard of quality varies from place to place in the book. For example, the chapters mentioned in the preceding paragraph maintain a high level, excepting for a few sections which appear not to be fully digested nor clearly expressed, and which therefore strike the reader with a mild shock. The discussion of union-controlled hiring halls, as an illustration, begins with the implication that such halls are "almost certain" to lead to discrimination, favoritism, and internal politics. A page is devoted to the longshoremen's hiring halls on the West Coast, but no reference is made to the elaborate "plug-board" device whereby the union has sought to eliminate all possibility of favoritism and politics. Since these West Coast halls are admittedly of sufficient importance to warrant brief description in his book, it is reasonable to expect that they would have been mentioned as an exception to the general rule of favoritism which the author has enunciated.

Further, there is given no hint of the favoritism and politics which prevailed before the union hiring hall was established. As a matter of fact, the union's insistence upon controlling the hall (at the time of the 1934 strike) was the product of its determination to eliminate the graft and favoritism which had dominated the waterfront for a dozen years. The old "shape-up" system was intolerably corrupt and the longshoremen themselves were driven by necessity to abolish it. The seamen, likewise, sought union control of the hiring hall in order to eliminate the petty graft and incompetent favoritism

of the landlubber staff of the employers' hiring hall. I doubt if any union-controlled hiring hall has exceeded, in its massing of small-scale graft and politics, that notorious agency, which I described in this *Review* in June of 1935. Dr. Slichter's condemnation of union hiring halls is not adequate unless they are shown to be worse than reasonable alternatives. And this he has not shown. He mentions with approval the growth of government operated employment services, but does not discuss their potentialities, nor offer them as a general substitute. I still agree with Professor Slichter, however, in his broad conclusions on this subject, including his preference for public employment offices. Further, I cannot really contest any single statement in his discussion. Rather do I feel that misleading implications have crept into the text, apparently as a result of incomplete research or hasty analysis. The weight of this criticism, of course, is greatly mitigated when the vast scope of the work is recalled. No one can expect him to include everything.

The last third of the book is devoted to the major experiences with union-management coöperation, and includes studies of the women's garment industry in Cleveland, and the development of such coöperation on the railroads, by the Amalgamated Clothing Workers, and in the Naumkeag Steam Cotton Company. In all of these chapters there is evidence of a vast amount of original and competent research. In the chapters on the railroads, however, it is noticeable that no reference is made to the substantial work of Louis A. Wood. This is unfortunate, since Professor Wood is entitled to credit for his ground-breaking in this field, a piece of work fully as important as that of R. C. Nyman on the Naumkeag experiment, work which does receive due credit from Professor Slichter.

In drawing conclusions from his description of the four examples of union-management coöperation, the author presents an unexcelled analysis of the reasons why the device has spread so slowly, pointing out, among other reasons, the significant extent to which employers have been responsible for this lethargy. But then, apparently forgetting this opposition by employers which he has just expounded, he expresses his belief that union-management coöperation will spread more rapidly in the future because of the changed needs and attitudes of the unions. I agree with Dr. Slichter that the attitudes of unions are undergoing great changes, but I am not so optimistic as he in his apparent assumption that employer opposition is also vanishing. There are certain outstanding illustrations of business men who are really eager to deal in a business way with unions, as exemplified by Mr. William Batt, of SKF industries, in the Town Meeting of the Air last November. But I feel sure that a large proportion of America's business men are yet unconvinced, and will probably remain so for some time.

There is a further point which should be mentioned. Professor Slichter assumes that union-management coöperation will be the normal mode of organizational procedure when employer-employee relations "come of age" —when a fully developed "system of industrial jurisprudence" has emerged. The doctrine that such coöperation is an attempt at "class collaboration" and is therefore impossible (except in isolated instances) is of course a part of the Communist credo. But this doctrine is not necessarily invalid simply

because of its political affiliations. I have not read any exhaustive study of this doctrine, nor have I attempted to think it through myself. Therefore I am not prepared to state categorically that union-management coöperation is *the* form of the future, or that, on the other hand, it is the will-o'-the-wisp of hopeful but futile liberalism. Perhaps because I am disappointed that Professor Slichter did not think out this problem for me, I regret that he assumed the first alternative. But I do think that the second alternative should at least have been mentioned as a possibility. Throughout his chapters on the subject, there are indications of his awareness of the question, and frequently there are data which bear upon it. But the problem itself receives no special attention.

An important contribution made by the book is the result of the attention which it gives to the unwritten rules and traditions of certain trades and industries. The ignorance on the part of an arbitrator of such occupational peculiarities has resulted in the failure of many arbitrations. And the ignorance on the part of union men of the necessity for altering obsolete traditions has caused the decline, and sometimes the dissolution, of many unions. Professor Slichter has given us valuable information on many such traditions, information of great value to arbitrators, mediators, employers, and union men as well as to academic students. For this reason, among others, the book should be widely read and frequently used. During the trying times through which the United States is struggling, the book is pertinent and of immediate practical value, and should not be overlooked by anyone concerned with labor relations. When democracy itself is in peril, it is necessary to develop and strengthen the procedures of industrial democracy. This book, besides being a treatise on technical matters, is an inspiring essay on the potentialities of democracy.

The entire volume is excellently organized, so that, in addition to being good reading, it is readily usable for reference. The format is standard Brookings, the typography excellent. A good index, coupled with a detailed Table of Contents, provides ready access to the materials within the book. Dr. Edwin G. Nourse introduces the volume with a brief but graceful and relevant Preface.

William S. Hopkins

Stanford University

Labor Cases and Materials; Readings on the Relation of Government to Labor. By Carl Raushenbush and Emanuel Stein, editors. (New York: Crofts. 1941. Pp. xvi, 674. $4.00.)

The Development of Labor Relations Law. By Wayne L. McNaughton. (Washington: American Council on Public Affairs. 1941. Pp. 197. $3.00, cloth; $2.50, paper.)

Labor Cases and Materials will join Commons and Andrews as a standard reference work for the student of labor law. The book presents in an orderly classification the major pieces of labor legislation of the federal government and the states, together with the related decisions of the courts concerning

the constitutionality and the application of these statutes. Some of the important common law rulings of the courts affecting the legality of the objects and methods of American trade unionism are also included.

In many instances the laws are reprinted in their statutory form, save for minor editing and omissions. Descriptive summaries by the editors are also included where they are helpful as background material. The cases themselves are transcribed directly, in order to furnish the reader with the actual reasoning of the court in its original form. Where important dissenting opinions were involved, as for instance in *Morehead v. New York ex rel. Tipaldo*, where Mr. Justice Stone offered a vigorous criticism of the majority reasoning, the authors have made available the argument of the minority justices. Since many of the decisions of the Supreme Court in recent years were presaged in dissenting opinions of earlier years, the inclusion of these differences in judicial opinion is very valuable for the reader.

The material of the book has been divided into two major sections: one which is termed "Governmental Influences on Collective Bargaining," and the other "Government and the Labor Contract." Under the first topic, which was the work of Mr. Raushenbush, there are presented these subjects: picketing and intimidation, criminal syndicalism, laws affecting assembly and picketing, boycotts, the closed shop, mediation and arbitration, and the National Labor Relations act.

In the second topic, prepared by Mr. Stein, the material has been classified under these heads: regulation of labor supply, wages and hours laws, regulation of working conditions, workmen's and unemployment compensation, and old-age assistance and benefits.

Perhaps the greatest value of the book is that it gathers together conveniently a great number of important acts of legislation and related court decisions. Any teacher of labor law will perceive the advantages which this procedure affords. And if he is an exponent of the case method, as the authors declare themselves to be, he will possess in this work an indispensable teaching vehicle, since the student is given the primary materials of labor law for his own analysis and evaluation. This does much to replace the use of commentaries and secondary sources as a basis for course instruction.

In addition to presenting the sort of subject matter one might ordinarily expect to find in a book of this character, the authors have made some noteworthy additions. Thus the chapter dealing with mediation and arbitration contains a section on the limitations confronting unions in war and defense industries, in which the procedure of the First World War is set forth, along with some current issues and problems. In the chapter entitled, "The Borders of Violence," there is included considerable important historical material concerning industrial conflicts, along with related court decisions bearing on such disputes. Moreover, in the chapter on free speech and unionism, there are to be found the important decisions of the U. S. Supreme Court in the de Jonge and Hague cases, dealing with criminal syndicalism and with laws and administrative actions which affect the right of assembly. In the discussion of the National Labor Relations act, the authors have included an analysis of the bargaining unit problem, joining to it the decisions of the Court in

the International Association of Machinists and the Pittsburgh Plate Glass cases. Finally, in the chapter on the minimum wage, there is included a section on the Fair Labor Standards act, in which direct excerpts from the statute, as well as decisions of the Court in the Darby Lumber and Opp Mills cases, are to be found.

The material is well classified and carefully indexed. There is a useful analytical table of contents, a bibliography that is broken down by chapter headings, a table of cases with related page references, and the usual subject index. The result is a work of careful scholarship and considerable usefulness.

Dr. McNaughton's study, entitled *The Development of Labor Relations Law*, represents an attempt at an analytical and genealogical treatment of the changes which have occurred in this field of law during the thirties. The center of interest is the labor bargain and the rights of unions and of management in matters of labor relations policy. The contents are arranged for "the student of business rather than . . . the lawyer." The result is not a very original treatment of the problem, which is probably partially dictated by the author's decision to cover the field—a vast field, at that—rather than to deal intensively with a narrower and more workable sector.

Dr. McNaughton believes that labor relations law is a function of the forces of three distinct interest-groups: employers, employees, and what he terms "society as a whole." The simplicity of this breakdown, together with the author's judgment that laws such as the National Labor Relations act ". . . can remain in force only so long as public opinion tolerates them," may be questioned. Public opinion is a rather tenuous concept, and it is a long and risky step to assume that it stands in a direct and precise relationship to legislatures and their activities. Political power is just not that evenly diffused in our society.

The treatment of laws developed to protect the interests of employers is centered on an examination of the legal status of the different tactics used by employers to strengthen their bargaining power. These tactics include "positive" efforts to strengthen the market position of employers, and "negative" efforts to weaken the bargaining status of the sellers of labor power. The same formal treatment is then applied to the activities of employees. Each tactic in the bargaining struggle is analyzed in terms of statutory enactments and common law decisions, in order that its legal status may be determined. In his findings and conclusions, the author has relied heavily upon what the courts have said, and upon what other students think about what the courts have said. The result is that there is very little original evaluation either of specific trends or of instances of reasoning.

G. H. Hildebrand, Jr.

University of Texas

Occupational Mobility: Democratic Efficiency through the Use of Human Resources. By Omar Pancoast, Jr. (New York: Columbia Univ. Press. 1941. Pp. viii, 155. $1.75.)

The author describes an ambitious, threefold purpose: to publish a doctoral

dissertation; to popularize a course of political and social action; and to demonstrate an application of economic theory in terms that a layman can understand. The first of these is obviously accomplished.

There are eight chapters. The first poses the question: Can democratic methods employ our human resources effectively? Four chapters then summarize historic and current economic points of view toward labor mobility and the allocation of labor power in modern society. In chapter VI, the author outlines his own proposal and indicates how labor can be properly distributed within the framework of a democratic society. Chapters VII and VIII present the author's answer to some of the questions raised by his proposal and summarize his final conclusions.

The study seeks "to develop a line of consistent thinking, on the basis of which we could build a sound policy of labor allocation" (pp. 8-9). The author believes that "it justifies a renewal of faith in the decentralized, individualistic method of running our economic affairs" (p. 10). Economic consideration of labor allocation up to this time has been largely concerned with the possible relationship between wage adjustments and employment. Argument has centered on the probable elasticity of demand for specific types of workers, as, for instance, those in the building trades. Mr. Keynes has, however, pointed to one weakness in such analysis in its tendency to ignore the essential interrelationship of distributional and productive aspects of an economy, *e.g.*, the effects of increased shares of income for certain groups on savings and consumption. "It is left to the present writer to apply the newer methods of analysis (especially the Keynesian framework) to tracing the actual steps by which mobility might be expected to improve employment and general economic efficiency" (p. 106), and to demonstrate the effectiveness of a reduction of wage differentials, as distinguished from the Keynesian concept of a universal and proportionate decrease of all wages.

The author's proposal is, then, that society facilitate, by special training and/or whatever means appear likely to be effective, the movement of workers from lower paid into higher paid occupations. The first contemplated result will be a reduction in earnings differentials as earnings of lower paid workers rise and those of higher paid workers decline. The shift will increase the propensity to consume on the part of workers involved and the public. Opportunities for capital investment will be increased, and business morale will be maintained at a high level. The social cost of retraining and facilitating such shifts would be generously compensated by the improved employment situation. Indeed, this program is essential, for now "the better opportunities to make a living [are] preëmpted by a few groups" and "the lack of buying power in the rest of the population condemns even this privileged fraction to a decreasing market for what they sell and higher costs for what they buy" (p. 135).

Laymen may be more impressed with this line of argument than can be expected of those who have had occasion to study labor markets. For it involves a subtle but possibly important confusion of wage rates and earnings and some highly significant questions as to the elasticity of demand for various types of labor and for the products of that labor. Thus when workers

shift from low to higher paid occupations, it appears likely that (1) wage rates in the high level occupation will fall, and (2) wage rates in the lower level occupation will rise. But whether earnings will rise in either case depends on the elasticity of demand in these markets. That cannot be measured by assumptions, particularly questionable ones such as that demand is "notoriously inelastic" in extractive industries (pp. 109 and 136). Nor is it so simple that "at the worst, we might set statisticians to discover the areas where such conditions prevail" (p. 111). The point is, as the author cleverly and effectively demonstrated in his chapter III, that almost nothing is known as to the elasticity of demand for labor in specific markets. Until factual knowledge is available, demonstrations such as this can be presented only as hypotheses rather than conclusions.

The hypothesis thus stated is, however, intriguing and worthy of careful study. Only empirical investigation of specific labor markets can provide a factual basis for appraising its practical value.

Dale Yoder

University of Minnesota

Economics of Labor. By Richard A. Lester (New York: Macmillan. 1941. Pp. xv, 913. $3.75.)

In many American colleges and universities the study of labor problems is either omitted entirely or treated as a shabby and unwanted visiting relation by the reputable members of the economics family. The explanation is multiple. But I suspect that one factor is the failure on the part of students of labor to master and use the organon of theory which is central in most serious work in the subject. This failure is apparent in the textbooks available for college courses in labor problems. There is the familiar description of the social and political trends influencing labor history. There are the position of trade union organization and the techniques used by them to improve the welfare of members. There is ordinarily but an incidental and apologetic use of theory, and a corresponding inattention to certain economic problems that require theory if they are to be studied at all. It is frequently difficult to decide whether the result is a book in economics or not.

Mr. Lester writes as an economist, determined to employ the analytical instruments of the economist in his study of the problems of labor. Let it be said at once that he has carried out his determination with persistence and skill.

Over one-half of his long book is devoted to "Labor's Economic Problems": wages, income, employment, hours, relief, old-age, accidents and the rest. Each is analyzed with the full kit of the economist's tools at hand. The emphasis is ever upon the problems as derived from and affected by the market situation. More arresting still is the inclusion in his tool-kit of those shining instruments of monopolistic-competition and savings-investment-income theory, which are the outstanding contributions of the last half-century.

His was no easy task. As he would perhaps be the first to admit, it requires doing again and again if the most effective way of presenting a difficult and

subtle material is to be found. The several chapters on wages and employment rest on an extensive body of literature in price and income theory. They should help the hard-working student to a deeper understanding of the problems than can be won in any other way. But the inherent difficulties are so great that I doubt whether most undergraduates, as now prepared, can surmount them successfully. If they are to do so, they must first of all gain a firm elementary grasp of contemporary price theory. A course in monetary or income theory would also prove highly desirable. Otherwise, Mr. Lester's writing will be very refractory indeed, for all the fact that it is in my opinion well done, and sound in its general directives.

Consistent with his theoretical chapters, Lester has included a set of studies of specific market situations in which labor organization has grown: transportation, coal, clothing, steel, newspapers. They run in terms of the effect of the economics of the industries upon labor relations, and are excellent. Teachers can readily expand this section at will, by similar forays into other organized fields. Students should gain rich insight into the rationale of union techniques, their limitations, and the consequences of their use on the welfare of union members, of workers outside their ranks, and the economy as a whole. By continuous reference to the theory previously discussed, Lester evokes an enviable unity of presentation.

His emphasis upon principles is at the expense of emphasis on facts as such. This is no loss, for, as he says in his preface, "facts mean little until they are examined and interpreted." The teacher can easily supplement Lester by referring students to the abundant factual data in newspapers, magazines, and private or public reports.

Some readers will consider his chapters on labor organizations, employer attitudes, and government intervention inadequate. In my opinion, Lester might well have emphasized more than he has the National Labor Relations act, the forces that so dramatically led to its adoption, and the subsequent work of the National Labor Relations Board. The political aspects of the labor movement and the baffling problems of dual unionism could thus have been brought into higher relief. These deficiencies can, however, be repaired.

The book will win approval on its central distinction: emphasis on theory, the market, and contemporary price and income analysis. For graduate students it is an excellent manual. For undergraduates I hope it may soon become so as teachers coöperate by giving students more adequate training before permitting them to tackle some of the most difficult problems in the entire field of economics.

J. RAYMOND WALSH

Williams College

Stabilizing Jobs and Wages through Better Business Management. By HERMAN FELDMAN. (New York: Harper. 1940. Pp. xv, 334. $3.50.)

Dean Feldman's name is well known as a student and proponent of plans for the regularization of employment and income. The present volume is a welcome addition to his earlier work in this field. It is his conviction that

in spite of the many factors operating to produce job insecurity, the efforts of pioneering firms have demonstrated that much can be done to produce a greater degree of regularity in work and wages. A persistent purpose, imagination and appropriate methods on the part of management can, he believes, accomplish this result. He sets out, by reference to the experience of over a hundred firms, to stimulate the imagination and suggest the methods.

This is the primary utility of the book. It is a handbook of possibilities in the field of employment regularization which demonstrates the inventiveness of American management and which, at the same time, describes their efforts in enough detail to provide stimulus for those who lack such inventiveness.

Systematically he discusses the various possibilities: market research and distribution planning, diversification and simplification of product, market controls, balancing the work schedule, planning and administering technological change, personnel practices, wage payment stabilization, seniority provisions, interplant coöperation, and other devices. Each area of effort is described in detail, the advantages, disadvantages, and problems of each are explored. The latter includes an exploration of the issues raised by the necessity of administering such projects in an era of industrial relations thoroughly modified by new developments in labor organization and social legislation.

This is enough for one book and a major contribution to thought. One hopes, however, that the author will continue his work in this field and give us eventually a comparative study of the experiments which failed, as well as of those which had some measure of success, in order that we may understand the factors which make for succeess and failure in such attempts. In the present work, Feldman has given a stimulating account of the alternative means of accomplishing a desirable and increasingly important objective. For the most part he leaves to management the task of learning by trial and error the adaptability of these means to their own circumstances. Ultimately, of course, that must be done. But a more thoroughgoing analysis of the factors making for success or failure would make that adaptation less open to error.

E. Wight Bakke

Yale University

Social Insurance; Relief; Pensions; Public Welfare

Economics of Social Security. By Seymour E. Harris. (New York: McGraw-Hill. 1941. Pp. 455. $5.00.)

This study might be termed an approach to some basic aspects and problems of the American social security program from the point of view of modern economic theory. The author is not interested in social security as an institution to improve the lot of its beneficiaries, but in its effects upon the volume and fluctuations of output and employment in the economy as a whole. It is a study addressed to the students of banking and monetary theory, fiscal

policy, and economic fluctuations, at least as much as to people who are interested in social security for its own sake.

This book is dedicated to J. M. Keynes. The author is a Keynesian, but not a slavish follower of Keynes. He is most appropriately described as an economist who brings to bear on the problems he considers all major recent developments in economic theory. He avoids unsupported assertions; instead, he carefully analyzes his problems and logically develops his conclusions. At the same time, he fairly presents arguments and points of view with which he does not agree. His treatment is scholarly and convincing throughout.

There are three parts to this study: the relation of the social security program to output, questions of finance and reserves, and the incidence and effects of payroll taxes. All are brought together in an opening summary chapter, followed by a more extended discussion of some of the practical applications of the author's conclusions. Briefer summaries occur at the end of the treatment of each major subject. These are the parts of the book in which general readers will be most interested, but students of economic theory will get most out of the carefully reasoned discussion upon which the conclusions are based.

In Part I, the first question considered is that of the deflationary effects of the reserves in the social security program. The author concludes that on this issue no decisive answer is possible. The social security taxes, which then went almost entirely into reserves, were a factor in bringing on the depression of 1937-38. Other factors, however, were more important, and if all social security receipts and payments are taken into consideration, there was a large net contribution to spending by the Treasury.

Next, the author discusses the effects of the social security program on savings, consumption, prices, and output. These effects will vary with methods of financing, the degree of employment of the factors of production, the extent of their mobility, the propensity to save, the rate of investment, and still other variables. Any attempt to give dogmatic answers to the many theoretical questions which arise at this point is unscientific.

The final subject discussed in Part I is that of the investment of the social security funds. It was this problem which attracted the author to the comprehensive study of the economics of social security which he has undertaken. His conclusion on this subject is that "on the whole, the system in operation seems to be the most acceptable one."

The discussion in Part II, "Finances and Reserves," centers around the controversy over reserves in the old-age insurance system which raged so furiously prior to the Social Security Act Amendments of 1939. The general conclusion is that, while the 1939 amendments helped to allay opposition to the program, they, unfortunately, were supported by untenable arguments which may have serious consequences in future years. The 1935 law did not provide for full reserve financing, and the reserve by 1980 would almost certainly have been smaller than $47,000,000,000. "Pay-as-you-go" as used in this controversy is a most inappropriate term, as it is really deficit financing, with no provisions for meeting the cash deficits when they arise. "There is a real danger of the non-fulfillment of promised benefits in the later years" and

an absolute certainty that very greatly increased taxes will be necessary to meet the increasing obligations for promised benefits. In view of this situation, the reduction in the taxes of the next three years, made in the 1939 amendments, was a mistake. While the $1,000,000,000 of revenue which will be lost by reason of this tax reduction does not bulk large in comparison with the total of the taxes which are expected to be collected in the next few generations for old-age insurance purposes, it is ominous that this needed revenue was lost "at the first signs of pressure." The mistake made is the more tragic because, within a few months, we had to launch our great defense effort, in which concern about the alleged deflationary effects of the social security taxes has been superseded by anxiety about inflationary price rises.

Part III deals with the incidence and effects of the pay roll taxes. This is the longest part of the book and seems to the reviewer to exhaust the subject. The conclusion reached is that "The more or less accepted theory that labor ultimately pays the costs either through a reduction of money wages or of employment is subject to important reservations. A substantial part of the burden falls elsewhere."

While the above summaries present the author's major conclusions, they do not convey an adequate idea of the real merits of this study. These lie in the data and reasoning behind these conclusions. While mainly a theoretical discussion, a great mass of statistical and other data bearing on the problems dealt with is brought into the picture. With rare skill, the interrelation of these problems and the dependence of the correct answers upon many variables is never lost sight of.

Most of the specific questions considered are issues which were to the front before Congress amended the Social Security act in 1939. New amendments are soon to come before Congress and these raise new questions. Because the author has dealt with fundamentals, however, this study is most timely. It is certain to be widely quoted in the debate over the proposed new amendments. It is to be hoped, also, that it will influence the action taken, and, to the extent that it does so, we will have sounder social security legislation than we are otherwise likely to get.

This is a book which all those who have responsibility for formulating the social security legislation of the country should read. It is valuable also to all students of modern economic theory and of social insurance. It is an excellent illustration of the possibilities which theory affords for the sound solution of complicated economic problems.

EDWIN E. WITTE

University of Wisconsin

Society and Medical Progress. By BERNHARD J. STERN. (Princeton: Princeton Univ. Press. 1941. Pp. xvii, 264. $3.00.)

In his autobiography some years ago, the well-known economist and sociologist Franz Oppenheimer reported that his experience as a physician in Berlin at the end of the nineteenth century made him aware of the close relationship between medicine and social conditions, and led him to dedicate

his life to a socio-economic study of society through which he hoped to find an answer to the medical problem which confronted him. The author of this book has moved in the opposite direction: Research in social institutions led him to problems of physical pathology which he regards as basically social, although medical science previously had claimed them as its exclusive domain. Sharing his view, the Committee on Research in Medical Economics invited him to carry further his studies on the interrelations of medicine and society to which he had contributed in 1927 in *Social Factors in Medical Progress. Society and Medical Progress* is the outcome.

Medical science has never been self-sufficient. Its development, therefore, cannot be traced purely biographically, *i.e.*, by following the approach of the medical profession to its problems. Instead, it is necessary to note the close association of the growth of medicine with that of other sciences. Medicine derived special impetus, for instance, from the concept of natural philosophy; from mathematics which permitted quantitative records for description and prognosis; from biology, botany, physics, chemistry, and lately from psychology and sociology. In the last century its progress has been influenced greatly by rapid urbanization with its concomitant insanitation, congested slums, and social class stratification; by the transformation of a locally self-sufficient agricultural economy into an internationally interdependent industrial economy; by tremendous population increases; by establishment of institutions such as hospitals and public health agencies, etc. In turn, medicine has affected other sciences by revolutionary discoveries in its own field; by transforming the age composition of the population; by increasing health standards greatly; by stimulating important industries serving its ever-expanding purposes, etc.

The progress of medicine, however, has been a tragic history of prejudices, errors, obstacles, and missed opportunities. In the brilliant chapter on "Resistances to Medical Change" we become acquainted with the partly irrational, and partly calculating, forces ever in the way of medical innovation. Vested interests, personal rivalry, academic bureaucracy, intellectual blindness, doctrinarianism are the *raison* of the long and arduous, but finally triumphant, evolution of medicine from magico-religious supernaturalism to its present qualification as a science.

The progress of medicine could be much greater if socio-economic conditions were more favorable. For example, malnutrition, the cause of many diseases, is clearly an anachronism in contemporary society which has the knowledge to make an adequate food supply available to all. By showing the grievous disparity between available medical knowledge and its lagging application in social reality, the author places before society the vital alternative on which further medical development depends: either progress by transforming our socio-economic system according to medical postulates, or stagnate in the present discrepancy. It is a constructive conclusion to a thoroughly suggestive book.

PHILIPP WEINTRAUB

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British Unemployment Programs, 1920-1938. By EVELINE M. BURNS. (Washington: Committee on Social Security, Social Science Research Council. 1941. Pp. xx, 385. $2.75.)

When in 1911 Great Britain invented the scheme of national unemployment insurance she was initiating a radical change in provision for the unemployed. Freed from the deterrent devices embodied in the age-old poor relief system, the insecure worker now by contractual right drew a specified weekly sum without the necessity of first exhausting his other resources or of submitting to the hated means test or to other coercive controls. This right was hedged about with certain economic safeguards, which limited the amount of payments and their duration in relation to a fixed number of contributions (taxes) paid by the insured or in his behalf and thus confined the system to those who were ordinarily short-period unemployed. The numbers benefited in the beginning were few and unlikely to be corrupted by generous treatment. As the magnified unemployment problem during the next three decades challenged the country to a more extended treatment, other groups of unemployed were swept into the program, category by category. Those unemployed because of the war were given from the Treasury out-of-work donations (1915-1921), and the long-time insured unemployed who had exhausted their contractual benefits received uncovenanted benefits (1921-1931), transitional payments (1931-1935) and payments from the Unemployment Assistance Board (1935 to the present), while the local poor relief (public assistance) system took full responsibility for the unemployed not comprised in these categories. In fact the local authorities were used from 1931 to 1935 as agencies to administer the means test to applicants for transitional payments from the national insurance funds. Unemployment insurance has been the basic element in this British amalgam, although in the treatment of the residual unemployed the other institutions have influenced the insurance system and have been influenced by it.

In her study of British policy in the many-sided issues concerned with large-scale unemployment from 1920 to 1938—the period between the two world wars—Dr. Burns has emphasized the interaction of insurance and of public assistance. The peculiar characteristics of insurance—limited benefits for a limited duration—required supplementary measures flexible enough to meet family needs in long-time unemployment. Once the residual unemployed also have received the right to be well treated, Dr. Burns raises the question whether unemployment insurance needs distinguishing status and whether the right to the "insurance" type of benefit has not become so firmly established in Great Britain as to make unnecessary the independent and separately financed insurance system. Progress made since 1935 in the combination of insurance and unemployment assistance—in scope, flexibility, finance and administration—suggests the possibility of a basic unification, at least in finance.

In fuller perspective Dr. Burns assesses the achievements of the British system for handling unemployment relief demands: its basic stability; its freedom from political and personal bias toward the individual; its success

in recruiting the service and coöperation of private citizens for administration; and its success in operating a complicated categorical relief program. She emphasizes the outstanding failure to initiate significant positive programs of training and public works. These successes and failures are explained in terms of their proper British social and political setting. While wisely avoiding loose comparisons of British experience with that of any other industrial country, Dr. Burns draws a conclusion which students of unemployment in all democratic countries may well ponder. Social policies and programs cannot operate in watertight compartments. "For a community which has accepted the idea of the basic minimum as fully as has Great Britain, the discovery that the sum of money necessary to assure this standard to an unemployed man may be in excess of that earned by many workers in full employment acts not solely as an argument to reduce unemployment assistance, but becomes also a challenge to remove the social inadequacies of the wage system" (p. 336).

The author's analysis of British policy as it developed step by step is penetrating, balanced, detached and realistic. It is based upon personal experience in the British Ministry of Labour, extensive interviews with officials and citizens, correspondence and documentary materials. Numerous tables in the appendix aid the American reader to appraise the extent of unemployment in Great Britain. The reviewer knows of no study of this subject which has comparable scope and analytical value.

ELINOR PANCOAST

Goucher College

Population; Migration; Vital Statistics

Foundations of American Population Policy. By FRANK LORIMER, ELLEN WINSTON and LOUISE KISER. (New York: Harper. 1940. Pp. xiii, 178. $2.50.)

Prepared by a committee of specialists for the National Economic and Social Planning Association, this volume will be of interest to economists primarily because it proposes a public policy. In essence, it is an appeal for the integration of population policy with national social planning. Although much has been written about European policies, this is the first book to attempt the formulation of an American plan to combat the steady decrease in the birth rate among important groups of our society.

Two generalizations are made by the authors from the demographic analysis: (1) there are certain population trends taking place in this country, especially for the middle clases, which are inherently self-destructive; (2) these trends are largely determined by social conditions and are, therefore, subject to social control. The basic objectives are set forth as a higher standard of living for the majority of our people, conservation of natural resources, and a general improvement in health and cultural capacities.

The data on which the conclusions are based consist of chapters on population trends and the relation of these trends to labor and natural resources, consumption patterns, investment and economic enterprise, social aspects, and the changing pattern of the family. It is pointed out that a decline in actual numbers seems almost inevitable. If present trends continue, the actual reproduction rate within a few decades may not be more than three-fourths, or even two-thirds, of that required for the maintenance of a permanent population. The differential birth rate places a cruel burden upon certain groups in our society to furnish the forthcoming generations. These groups, as a rule, have the fewest economic, cultural, and educational advantages. Even if this fact should not prove important from the qualitative aspect, it is doubtful that society can fully overcome these environmental factors by costly and mounting outlays. The force of the differential birth rate is brought out by some interesting facts. For example, the rate for the Spanish-Americans, Mexicans, and Indians in this country is so high that these groups may in time become as numerous as the Negro population (p. 23). In spite of the skillfully-prepared material, however, for those familiar with the previous work of Lorimer and Osborn (*Dynamics of Population*) and the recent work of Carter Goodrich and the National Resources Committee, there is little new.

The chapter on "Population, Investment, and Economic Enterprise" consists of only twelve pages and suggests that the decline in population growth may intensify the forces of depression and stagnation. References are made to articles of Professor Hansen and Mr. Keynes. In short, the remedy for this cessation of growth is planning on a national scale and the extension of governmental enterprise and services.

Of primary importance in this study are the positive measures recommended in the last chapter which may be summarized as follows:

1. Stimulation of investment and economic activity, and an increase in the general level of consumption through planning. An increased participation of the government together with an extension of public services.

2. Moderation of the present handicaps of families with several children by payments in kind by society, such as maternity care, housing programs, lunches for children, and other benefits.

3. Distribution of contraceptive information and devices equally to all classes and areas.

4. A large and wide extension of public provision for medical care, especially for mothers and children.

5. Plans, such as part-time and periodic employment and maternity leave, for the removal of the difficulties of the participation of mothers in work outside the home.

6. The development of public and community attitudes, and increased interest in children; consumer coöperatives, and other forms of community and coöperative enterprises.

All will agree that the basic objectives set forth in this book are desirable, but there will be disagreement as to how they are to be attained. The authors of course realize that population studies arouse strong emotions, and that

there will always be opposition to certain aspects of their proposed policy. Not every economist will be in agreement with the broad, national planning advocated; some are not even alarmed about the cessation of population growth.

This book says little about what seems to be the greatest gap in population literature requisite for planning—the lack of authoritative data which shows why families do not have children.[1] The availability of contraceptive measures to all classes would undoubtedly lower the birth rate, but it is not at all certain that the removal of economic burdens through public benefits, and the other measures suggested, would cause our middle-class group to have a sufficient number of chidren to replace themselves.

Myrdal, in his recent book, calls population "the grand tradition of the economist." Inasmuch as the present war will bring forth new problems, and the need for an early consideration of them, it is to be hoped that more economists will return to their "grand tradition" and join with other workers in tearing down the lettered compartments of social science and take part in formulating a policy. The book at hand is a constructive beginning.

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Unclassified Items

Human Nature and the Social Order. By E. L. THORNDIKE. (New York: Macmillan. 1940. Pp. xx, 1019. $4.00.)

Professor Thorndike set for himself a challenging and formidable task in assembling the "substantial contribution" which "human biology and psychology" make to an "adequate science of human thought." The very attempt in its boldness calls to mind the several Outlines of H. G. Wells; but this volume lacks their readability and their intangible sense of sweep and vision and verve.

To this reviewer, Part I, which provides the background of formal psychological knowledge, is far and away the better half of the book. Here Thorndike is on ground he has made his own through a lifetime of study. One may recognize the omissions from the psychological overview—the virtual ignoring of the Freudian and *gestalt* approaches. But he has presented here what students of his texts have been taught to expect. This recapitulation consumes four hundred of the thousand pages.

Part II ranges over an enormous area of social activities, trying to establish some long-range, verifiable truths of human nature in its broad social setting. The chapter titles alone indicate a range of topics upon which it would not be surprising if any one student were less than conclusive or satisfactory in

[1] The Milbank Memorial Fund has recently completed a study on this subject.

his pronouncements. Perhaps one can most readily suggest the limitations of the method employed by a few sentences which are not too untypical.

> Common observation seems to indicate that capitalists and business men are less sharp and greedy in their dealings with their workmen than with other capitalists and business men and with the purchasing public. The purchasing and sales departments probably drive harder bargains than the personnel department . . . (p. 581).
>
> It can be argued that industrial management of the future will profit from the sacrifice of courage and dominance to reliability and coöperativeness. All these matters are more suitable for research than for discussion (p. 624).
>
> In so far as the trouble lies in our institutions, laws, and customs, science should improve them as it has improved our material instruments. If it also lies deeper, in human nature itself, science should improve human nature (p. 583).
>
> Reforms which concern the ownership of material property concern only a rather small fraction of human life (p. 698).
>
> It may further be taken as certain that the welfare of society will never be cared for by society acting by itself, but only by the acts of persons (p. 720).
>
> Psychology finds little friendship between *vox populi* and *vox dei*. It would justify majority decisions, if at all, on the grounds that they are convenient to obtain, commanded respect and allegiance in a country where they were customary, and were insurance against various pernicious sorts of oligarchy (p. 793).

If this kind of sentence is psychological science in the service of human welfare, one hopes that the science of semantics will have a prior development.

Finally, it is not captious to point out that despite the twelve-page bibliography the omissions are conspicuous as to those phases of applied psychology which have latterly had scholarly formulation. The work of the Harvard group around Elton Mayo, of Kornhauser, McMurray, Link, Houser and others, comes at once to mind.

Realization of the investment in mentality and money which this encyclopedic volume represents constitutes an embarrassment to the reviewer who would be discriminating yet appreciative. Perhaps the time has passed when any one writer should essay this kind of task. The difficulties of it for a single author are obvious. But the difficulty of the task and the eminence of the author should not deter the reviewer from announcing his conclusion that the total product is disappointing.

ORDWAY TEAD

New York

TITLES OF NEW BOOKS

Economic Theory; General Works

Bladen, V. W. *An introduction to political economy.* (Toronto: Univ. of Toronto Press. 1941. Pp. x, 299. $2.25.)

Czajkowski, C. J. *The theory of private property in John Locke's political philosophy.* (Notre Dame, Ind.: Author. Pp. 116.)

Gale, R. H. *Basic principles of economics.* (Sierra Madre, Calif.: Author, 153 E. Highland Ave. 1941. Pp. ix, 296.)

Mander, L. A. *Foundations of modern world society.* Stanford books in world politics. (Stanford University, Calif.: Stanford Univ. Press. 1941. Pp. 921. $4.25.)

McCormick, H. M. *Money, freedom and progress; a proposed Constitutional change for the common good.* 5th ed. (New Albany, Ind.: Valley Press. 1941. Pp. 115. $1.)

Norris, R. T. *The theory of consumer's demand.* Vassar College pub. (New Haven: Yale Univ. Press. 1941. Pp. 220. $3.)

Rappard, W. E. *Antoine-Élisée Cherbuliez et la propriété privée.* (1797-1869.) (Zürich: Éditions Polygraphiques S.A. 1941. Pp. xi, 209. Broché, Fr. 10; relié toile, Fr. 12.50.)

Rockefeller, D. *Unused resources and economic waste.* (Chicago: Univ. of Chicago Press. 1941. Pp. ix, 260. $2.)

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Contemporary civilization source book: Part 1, sections 1-4; Part 2, sections 1-9. (New York: Columbia Univ. Press. Various pages. Pt. 1, $3; pt. 2, $1.50.)

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Contents: "The Supply of Bank Money in England and Wales, 1920-38," by R. M. Goodwin; "A Theory of Long-Run Distribution of the Product of Industry," by M. Kalecki; "On Risk," by J. Steindl; "A Survey of Industrial Development in Great Britain Planned since the Commencement of the War," by P. W. S. Andrews; "The Consumption and Rationing of Meat and Cheese," by R. S. G. and M. E. E. Rutherford.

Studies in economics and industrial relations; University of Pennsylvania bicentennial conference. (Philadelphia: Univ. of Pennsylvania Press. 1941. Pp. v, 183. $2.)

Contains the following papers: "Economic Resources in Economic Theory," by W. C. Mitchell; "Our Future Economic Defense," by H. Hoover; "Investment in Relation to Business Activity and Employment," by J. M. Clark; "Capital Formation, 1879-1938," by S. Kuznets; "Investment Incentives," by A. H. Hansen; "American Research in Price History," E. J. Hamilton; "The Professional Accountant's Responsibilities to the Public," by J. K. Mathieson; "Management's Responsibilities to the Public for Accounting Report," by Phillip L. West; "The Government's Responsibility for the Regulation of Accounting Reports," by W. W. Werntz; "The Development of National Labor Policy," by S. H. Slichter; "Is Unemployment Inevitable?" by J. D. Brown; "Is Unemployment Inevitable?" by W. A. Berridge.

Economic History

Handlin, O. *Boston's immigrants 1790-1865, a study in acculturation.* Harvard hist. stud. no. 50. (Cambridge: Harvard Univ. Press. 1941. Pp. xviii, 287. $3.25.)

Hirschfeld, C. *Baltimore, 1870-1900: studies in social history.* Stud. in hist. and pol. sci., ser. 49, no. 2. (Baltimore: Johns Hopkins Press. 1941. Pp. 176. $1.50.)

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LANE, W. J. ***Commodore Vanderbilt: an epic of the steam age.*** (New York: Knopf. 1942. $3.75.)

LEWIS, W. S. ***Three tours through London in the years 1748-1776-1797.*** Colver lectures, Brown Univ., vol. 21. (New Haven: Yale Univ. Press. 1941. Pp. 147. $2.50.)

The sights, sounds, smells, people and life of 18th-century London in three specific years are depicted in these three imaginary tours, which the author has been able to reconstruct through his work on this period as editor of the Yale Edition of "Horace Walpole's Correspondence."

MADARIAGA, S. de. ***Hernán Cortés, conqueror of Mexico.*** (New York: Macmillan. Pp. 663. $4.)

This biography is also a history of the conquest of Mexico.

MORISON, S. E. ***The maritime history of Massachusetts, 1783-1860.*** (Boston: Houghton Mifflin. 1941. Pp. 431. $4.)

New illustrations and a supplement of letters received by the author since the book's original publication have been added to this new, lower-priced edition.

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OVERTON, R. C. ***Burlington West, a colonization history of the Burlington Railroad.*** (Cambridge: Harvard Univ. Press. 1941. Pp. xviii, 583. $4.50.)

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In effect this is the fourth edition of the author's *Introduction to Federal Taxation* published in 1936.

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For the first time in this annual compilation of tax-yield statistics, state collection figures for the entire decade of the 1930's are presented. Federal tax collection data are given for the period 1911 to 1940.

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NOTES

Editorial Note—With this number, various minor changes are introduced into the format of the *Review*. The principal change is a completely different type which, to my eye at least, increases the ease of reading. The new design of the cover is strictly tentative and subject to later more radical changes. It had been intended to start this volume with such changes as a longer page, broader margins, and new paper and cover stock; but commitments which had been made for paper prevented it for the current year. After that, no doubt we shall be lucky to get paper at all.

The only noticeable alteration of internal structure is the running of all reviews consecutively, instead of interlarding them into the booklist. They are still kept classified, but I am inclined to the further step of ignoring the classification, and presenting them in whatever order seems good and proper. On this point I am, however, open to persuasion.—P.T.H.

The fifty-fifth annual meeting of the American Economic Association will be held late in December, 1942, at Cleveland. Russell Weisman, associate professor in the business and economics department of Western Reserve University, has been named chairman of the local arrangements committee.

The Nominating Committee of the American Economic Association has been appointed, as follows: Frederick C. Mills, National Bureau of Economic Research, chairman; William Adams Brown, Jr., Brown University; Morris A. Copeland, Division of Statistics, War Production Board; Clare E. Griffin, School of Business, University of Michigan; Donald M. Halley, The Tulane University of Louisiana; John Ise, Kansas State University; and George Terborgh, secretary, Machinery and Allied Products Institute.

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Thompson, S. H., 3535 R St., N.W., Washington, D.C.
Timmons, J. F., 103 North Randall Ave., Madison, Wis.
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At the twentieth annual meeting of the Pacific Coast Economic Association, held December 29-30 at the University of Southern California, the following officers for 1942 were elected: Bernard F. Haley, Stanford University, president; James H. Gilbert, University of Oregon, vice president; Hampton K. Snell, University of Southern California, secretary-treasurer; Clark Kerr, University of Washington, editor. New members of the executive committee are Norman S. Buchanan, University of California, Berkeley; and Paul Dodd, University of California, Los Angeles. Other executive committee members are Hampton K. Snell; Elmer J. Brown, University of Arizona; and Marvell M. Stockwell, University of California, Los Angeles. Rockwell D. Hunt, University of Southern California, was elected to the Board of Trustees, of which the remaining members are Kenneth Duncan, Pomona College; and Richard B. Heflebower, State College of Washington.

The Proceedings of the meeting will be published in March or April and may be ordered from the secretary-treasurer. Single copies will cost $1.50.

The program of the 1941 conference was as follows:

The Defense Program: Labor, Prices—"Collective Bargaining and National Defense," by Evan B. Murray, Utah State Agricultural College.

Economic Developments on the Pacific Slope—"The Impact of New Land Developments upon the Agriculture of the Pacific Slope," by John A. Guthrie, State College of Washington; "The Impact of Columbia River Development upon Industry in the Pacific Northwest," by Samuel T. Moment, U. S. Department of the Interior.

The Defense Program: Finance—"Taxation as a Means of Controlling Runaway Prices," by Vernon G. Sorrell, University of New Mexico; "Fiscal Policy and the Defense Program," by A. P. L. Turner, Jr., Montana State University.

Economic Theory—"Theoretical Notes on Advertising Policy: Its Place among the Competitive Policies of the Firm," by Roy W. Jastram, Stanford University; "Uncertainty and Idle Balances," by William J. Fellner, University of California.

The Defense Program: International Economic Relations—"More Trouble for

the Latins: An Analysis of the Latin-American Trade Relations in the Present Emergency," by Clayton D. Carus, University of Southern California; "Canadian-American Economic Relations in the Present War," by A. W. Curtis, University of British Columbia.

ACCOUNTANTS' AND ECONOMISTS' CONCEPTS OF COSTS—"The Theory of Asset Valuation Implied by Accounting Principles," by Joe S. Bain, Jr., University of California; "The Use of Accounting Data in Cost Analysis," by Maurice Moonitz, University of Santa Clara.

PROBLEMS OF POST-WAR RECONSTRUCTION—"Business Confidence as a Factor in Post-War Reconstruction," by George W. Zinke, Occidental College; "Post-War Reconstruction from the Point of View of a Sociologist," by Elon H. Moore.

EXAMPLES OF ECONOMIC ANALYSIS AS A BASIS FOR PUBLIC POLICY—"The Application of Economic Analysis to American Antitrust Law Policy," by Vernon A. Mund, University of Washington; "The Proposal for Federal Incorporation or Licensing of Interstate Corporations: The Place of Economic Analysis in Evaluating the Proposal," by J. O. McClintic, Pasadena Junior College.

DINNER MEETING—"Regionalism and Economic Welfare," by Robert D. Calkins, Columbia University; "A Sociologist Looks at War," by Jesse F. Steiner, University of Washington.

The allied social science associations are being served by the following officers during the present year:

AMERICAN ECONOMIC ASSOCIATION—Edwin G. Nourse, Brookings Institution, Washington, D.C., president; James W. Bell, Northwestern University, secretary.

AMERICAN ACCOUNTING ASSOCIATION—H. F. Taggart, 1505 Delafield Place, Washington, D.C., president; Robert L. Dixon, University of Chicago, secretary.

AMERICAN ASSOCIATION FOR LABOR LEGISLATION—Joseph P. Chamberlain, 131 East 23rd Street, New York City; John B. Andrews, 131 East 23rd Street, New York City, secretary.

AMERICAN ASSOCIATION OF UNIVERSITY TEACHERS OF INSURANCE—Edison L. Bowers, Ohio State University, president; Chester A. Kline, University of Pennsylvania, secretary.

AMERICAN BUSINESS LAW ASSOCIATION—Essel R. Dillavan, University of Illinois, president; Robert E. Lee, Temple University, secretary.

AMERICAN FARM ECONOMIC ASSOCIATION—George S. Wehrwein, University of Wisconsin, president; Asher Hobson, University of Wisconsin, secretary.

AMERICAN FINANCE ASSOCIATION—Charles L. Prather, Syracuse University, president; Louis J. Long, Allegheny College, secretary.

AMERICAN MARKETING ASSOCIATION—Vergil D. Reed, Bureau of the Census, Washington, D.C., president; Albert Haring, Indiana University, secretary.

AMERICAN SOCIOLOGICAL SOCIETY—Dwight Sanderson, Cornell University, president; Conrad Taeuber, Department of Agriculture, Room 3621, South Building, Washington, D.C., secretary.

AMERICAN STATISTICAL ASSOCIATION—Alfred J. Lotka, 1 Madison Avenue, New York City, president; Richard L. Funkhouser, American University, secretary.

ECONOMETRIC SOCIETY—Wesley C. Mitchell, Columbia University, president; Alfred Cowles, III, Cowles Commission, University of Chicago, secretary.

INSTITUTE OF MATHEMATICAL STATISTICS—C. C. Craig, University of Michigan, president; E. G. Olds, Carnegie Institute of Technology, secretary.

RURAL SOCIOLOGICAL SOCIETY—C. E. Lively, University of Missouri, president; Robert A. Polson, Cornell University, secretary.

A National Study Conference on "The Churches and a Just and Durable Peace," sponsored by the Federal Council of the Churches of Christ in America was held at Ohio Wesleyan University, March 3-5. The chairman in charge of arrangements was Mr. John Foster Dulles. The conference was broken up into four study groups: (1) the political bases of a just and durable peace; (2) the economic bases; (3) the social bases,

THE DEFENSE PROGRAM: INTERNATIONAL ECONOMIC RELATIONS—"More Trouble for

including racial and cultural factors; (4) the church's program in relation to a just and durable peace.

Ten graduate fellowships in government management will be awarded on a competitive basis at the University of Denver under a grant from the Alfred P. Sloan Foundation. The training period may begin June, 1942, rather than September as originally announced. Applications must be filed not later than March 10, 1942. Those interested should address the Department of Government Management, University of Denver School of Commerce, Denver, Colorado.

Beginning in June, 1942, the Department of Economics of Vanderbilt University will offer a limited number of courses during the summer.

The Special Libraries Association has undertaken a complete survey of the *Special Library Resources of the United States and Canada*. Volume I recently published gives complete and detailed information on 765 libraries. The address of the association is 31 East 10th Street, New York City.

The Journal of Land and Public Utility Economics, founded by Richard T. Ely and published by him at Northwestern University since 1925, has been transferred to the University of Wisconsin.

Because so many of its subscribers were on the continent of Europe before the war, the *Review of Economic Studies* finds it necessary to replace them with American subscribers if the continuance of the publication is to be assured. Subscriptions can be paid in dollars at $2.00 a year. Checks should be sent to Paul M. Sweezy, 10 Forest Street, Cambridge, Massachusetts.

The American Academy of Political and Social Science, 3457 Walnut Street, Philadelphia, now offers student memberships at $3.00 a year instead of the regular dues of $5.00 a year. The only requirement is that the student indicate the name of the educational institution at which he is enrolled. Since student memberships were first offered in the summer of 1940, about 275 students have joined. A number of persons have given memberships to students in whom they are interested or have made gifts, leaving to the Academy the designation of the students.

The Bureau of Business and Economic Research at the University of California offers qualified graduate students an opportunity to be appointed research assistants at an annual stipend of $750. These assistantships are designed to provide personnel for the Bureau and to assist graduate students to pursue their studies in economics. Those interested should write fully about their age, academic qualifications and major lines of interest to the Bureau of Business and Economic Research, Room 204 South Hall, University of California, Berkeley, California.

Appointments and Resignations

Beatrice Aitchison resigned her position at the University of Oregon on January 1 to become an associate economic and statistical analyst for the Interstate Commerce Commission.

Dorothy Bacon, professor of economics at Smith College, is on indefinite leave of absence while working for the Office of Price Administration in Washington, D.C.

William E. Bade, formerly of the University of Wisconsin, has been reappointed a Tax Foundation-New York University Fellow for the year 1942-43.

Claude D. Baldwin has accepted a position as associate economist with the rent section of the Office of Price Administration, Washington.

Lillian P. Barnes is now an assistant economist in the Division of Research and Statistics of the Treasury Department, Washington, and is engaged in conducting research on bonds and other Treasury obligations.

Robert D. W. Bartels of the College of Economics and Business, University of Washington, has been granted leave for the winter and spring quarters of 1942 to accept an appointment in the War Production Board, Washington, D.C.

Nathan M. Becker of the University of Toledo has been granted a leave of absence

for the year to serve as economist with the Far Eastern Section of the Office of the Coördinator of Information, Washington, D.C.

David E. Bell has been appointed a teaching fellow and tutor in economics at Harvard University for the year 1941-42.

A. T. Bonnell, who spent last year in France with the Friends Relief Service, has returned to the University of North Carolina.

Roy J. Bullock has been given leave of absence by the Johns Hopkins University and has been appointed principal business analyst with the chemicals section of the Office of Price Administration in Washington.

Benjamin F. Brook, professor of economics in the College of Business Administration of Butler University, has been granted leave of absence to take a position as liaison officer with the Civil Service Commission in Washington.

Norman S. Buchanan, associate professor of economics at the University of California, has been granted a leave of absence for the spring semester to accept a position as regional price executive in the Office of Price Administration, San Francisco.

Mrs. Philip Burnett has been appointed instructor in the department of economics at Vassar College for the second semester of 1941-42.

Grant H. Calder, instructor of economics at the University of Utah for the past two years, has been appointed secretary to LeRoy E. Cowles, president of the University.

Reynold E. Carlson has been given leave of absence by the Johns Hopkins University in order to serve as economist with the Office of Price Administration, Washington.

H. Peter Carstensen, instructor in commerce at the University of Pittsburgh, has resigned to accept a position in the Navy Department at Washington.

Wayne F. Caskey, formerly an economist with the Social Security Board, has joined the staff of the Consumers' Division, Office of Price Administration, as senior economist.

B. F. Catherwood has been appointed instructor in economics at Purdue University.

H. B. Cooley, assistant professor of economics and business administration at West Virginia University, has been appointed a member of the Planning Committee of the Interstate Commission on the Potomac River Basin by Herbert R. O'Conor, governor of Maryland and chairman of the Commission. Mr. Cooley is also secretary-engineer of the West Virginia State Planning Board, having been appointed to this position in June, 1941.

Herbert J. Cummings, instructor in accounting and economics at the University of Pittsburgh, has resigned to accept a position in the State Department, Washington, D.C.

Fred M. Dannenberg, research associate at the School of Commerce, Accounts and Finance, New York University, is on leave of absence to work with the War Production Board for the duration of the war emergency.

Paul T. David, associate director and chief economist of the American Youth Commission of the American Council on Education, has devoted his time recently to drafting the Commission's general report which was published in January.

Frederick S. Deibler will become professor of economics emeritus at Northwestern University at the end of the academic year.

James L. Dohr of Columbia University School of Business has been granted a part-time leave of absence so that he may direct the research program of the American Institute of Accountants.

Nicholas Doman, formerly of the University of Chicago, has been appointed acting assistant professor of economics and government at the College of William and Mary.

Joshua Domashevitsky, formerly a teaching fellow in mathematics at the University of Michigan, has been appointed teaching fellow in economics at Harvard University for the year 1941-42.

William Duffus of Ohio State University is serving while on leave of absence as a business analyst for the Committee on Economic Warfare, Washington, D.C.

Julian S. Duncan of the Babson Institute of Business Administration has gone to

Brazil where he will be stationed at the United States Consulate-General in Sao Paulo, doing economic research for the State Department.

Kurt Ehlers, formerly on the staff of the University of the Philippines, is acting assistant professor of economics at Indiana University.

J. G. Evans has been given a leave of absence from the University of North Carolina to accept a position as economist with the War Production Board, Washington, D.C.

Homer H. Fields of the University of Illinois has been appointed acting instructor of economics at the State College of Washington.

Lyle C. Fitch has resigned from the department of accounting of the City College of New York and has accepted a position in the department of economics of Columbia College, Columbia University.

E. A. Gilmore, Jr., is on leave from the University of Nebraska to serve as senior economic analyst in the United States Embassy at Montevideo, Uruguay.

Bernard F. Haley of the department of economics, Stanford University, has been appointed chairman of the Pacific Coast Regional Committee of the Social Science Research Council.

Morrison Handsaker has been appointed acting chairman of the department of economics and sociology at Occidental College while John Parke Young, chairman, is serving in Washington, D.C.

Walter K. Handy, Jr., is now an associate fiscal analyst with the Treasury Department, Washington.

Whitney Hanks, who has held a fellowship for the past three years at the University of California, has been appointed instructor of economics at the University of Utah.

Wesley Haraldsen has accepted a position as research instructor in the Employment Stabilization Research Institute of the University of Minnesota.

Hubert F. Havlik has been given a leave of absence by Columbia University and is now working with the civilian supply section of the War Production Board, Washington.

Tyler F. Haygood, formerly of West Virginia University, is now senior taxation economist in the Tax Inquiry Division, U. S. Forest Service, Washington, D.C.

Myron Heidingsfield, formerly with Columbia University and New York University, has been appointed assistant professor of economics and business administration at the College of William and Mary. He will also continue as consultant statistician and research methodologist to the post-war planning project, Survey of Research in Recreation, being conducted by the federal government.

Herbert Heneman, Jr., has been appointed research instructor in the Employment Stabilization Research Institute at the University of Minnesota.

H. E. Hoagland of Ohio State University is devoting the majority of his time during the present year to service as chairman of the University Committee on War Activities.

John A. Hogan, formerly part-time lecturer on economics at Tufts College in 1940-41, is a teaching fellow and tutor in economics at Harvard University for the year 1941-42.

Eliot Jones of Stanford University will teach courses in public utilities and transportation in the University of New Mexico summer session in 1942.

Harold Kelso has resigned as instructor in economics at Miami University and is now an economist with the Board of Investigation and Research, Washington, D.C.

Joseph A. Kershaw has resigned as assistant professor of economics at Hofstra College to accept a position as economist with the price analysis division of the Bureau of Labor Statistics, Washington, D.C.

Harold J. King, instructor in accounting at the University of Pittsburgh, has resigned to accept a position in the Navy Department at Washington, D.C.

Melvin M. Knight, professor of economics at the University of California, is on sabbatical leave of absence for the spring semester of 1942.

John Loftus has been appointed to teach at the Johns Hopkins University for the second semester of 1941-42.

Theodore F. Marburg has been granted a leave of absence by the University of Nebraska and has accepted a position with the Post-War Division of the Bureau of Labor Statistics, Washington.

Charles F. Marsh, professor of economics and business administration at the College of William and Mary, has been granted leave of absence to serve as principal economist in charge of a study of public aids to motor vehicle transportation for the Board of Investigation and Research, Washington, D.C.

William E. Mason, formerly at Multnomah College, has joined the faculty of the College of Economics and Business of the University of Washington for the winter and spring quarters of 1942.

Gerald J. Matchett has been granted leave of absence from Indiana University to accept a research position with the Department of Commerce, Washington, D.C.

G. Roger Mayhill, instructor in history and economics at Purdue University, has been granted a leave of absence for the second semester of 1941-42.

William G. McCarroll has been appointed instructor in economics at Indiana University.

J. M. McDaniel, Jr., of the economics department of Dartmouth College, has been appointed economic consultant to the National Resources Planning Board for the New England region and will divide his time between the college and the board.

Carl McGuire, formerly an instructor at DePauw University, has joined the teaching staff of the social science department of the University of Colorado.

Raymond F. Mikesell of the University of Washington College of Economics and Business has received an appointment in the Office of Price Administration, Washington, D.C., and has been granted leave for the remainder of the academic year.

Taulman A. Miller is on leave of absence from Indiana University in order to complete a study of the effects of the experience rating provisions of the Indiana Employment Security act.

H. B. Moore is on leave from the University of Kentucky and has accepted a position as regional price economist, Bureau of Labor Statistics, in charge of the Chicago regional office which coöperates with the Office of Price Administration.

Aurelius Morgner, formerly of the University of California and more recently associated with the Wage and Hour Division in its Kansas City office, has accepted a position as research instructor at the University of Minnesota, where he is working with the Employment Stabilization Research Institute.

Eugene Myears, instructor in economics at the University of Pittsburgh, has resigned to accept a position with the Office of Price Administration, Washington, D.C.

James C. Nelson has joined the staff of the Board of Investigation and Research, established by the Transportation act of 1940, as principal economist in the section of special studies.

H. C. Nolen of Ohio State University is teaching courses in management at the University of North Carolina during the winter quarter.

Eugene E. Oakes has been granted a leave of absence from Yale University to join the staff of the Division of Tax Research of the Treasury Department, Washington, D.C.

John E. Orchard of the Columbia University School of Business is on leave for the academic year 1942-43, and is now serving as assistant administrator of the Lease-Lend Administration.

Tom Jones Parry, vice president of the West Coast Sales Co., has been appointed part-time lecturer of marketing at the University of Washington for the winter quarter of 1942.

Millard Peck has transferred from the Division of Land Economics of the Bureau of Agricultural Economics to the Economic Defense Board, Washington, D.C.

John A. Pfanner, Jr., has been granted a leave of absence by the University of Nebraska to accept a position with the Office of Price Administration, Washington.

A. F. W. Plumptre of the University of Toronto has been granted leave of absence for

the duration of the war to act as representative in Washington of the Wartime Prices and Trade Board.

Kenyon E. Poole, assistant professor of economics at Brown University, has been granted a leave of absence to accept a position in the Division of Tax Research of the Treasury Department, Washington, D.C.

Alan Post, formerly at Princeton University, is acting as a full-time instructor in economics at Occidental College during the second semester of 1942-43.

Lloyd G. Reynolds has been appointed regional price executive for Philadelphia and Baltimore, with the Office of Price Administration.

Catherine G. Ruggles has been promoted from the rank of instructor to that of assistant professor of economics at the University of Illinois.

Richard F. Ruggles has been appointed a teaching fellow in economics at Harvard University for the year 1941-42.

Caleb A. Smith has been appointed a teaching fellow in economics at Harvard University for 1941-42.

Hampton K. Snell, associate professor of transportation at the University of Southern California, has been granted a leave of absence to become senior transportation economist with the Board of Investigation and Research, Washington, D.C. He was recently elected for a third time secretary-treasurer of the Pacific Coast Economic Association.

Myron J. Spencer has been appointed a teaching fellow and tutor in economics at Harvard University for the year 1941-42.

David Kenneth Spiegel has been appointed instructor in economics and business administration at the University of Delaware.

Ernst W. Swanson, associate professor of business administration at the State College of Washington, is on leave of absence and is serving as economist in the Finance Section of the Bureau of the Budget, Washington, D.C.

Albion G. Taylor has been advanced from assistant dean to dean of the Marshall-Wythe School of Government and Citizenship at the College of William and Mary.

John V. Van Sickle assumed the chairmanship of the department of economics of Vanderbilt University at the beginning of the academic year 1941-42.

Harry Venneman has resigned his position as chief of the reference and review section, Bureau of Research and Statistics, Social Security Board, to accept an appointment as administrative analyst, Division of Administrative Management, Bureau of the Budget, Washington, D.C.

John J. Walsh has been made instructor in economics at the Catholic University of America.

Dilworth Walker, professor of economics at the University of Utah since 1928, was appointed dean of the School of Business, University of Utah, in December. He had been named acting dean following the retirement in June of Dean Thomas A. Beal.

Lauren Walker has been appointed an associate in accounting at the University of Washington.

W. Allen Wallis, on leave for the autumn quarter from the department of economics, Stanford University, is a research associate on the staff of the National Bureau of Economic Research, New York City.

Weldon Welfling of Duke University will be on leave during the second semester of 1941-42 to serve as senior economist in the coke and pig iron section of the Office of Price Administration.

W. S. Woytinsky resigned from the staff of the Committee on Social Security of the Social Science Research Council on January 1, to become principal economic consultant of the Social Security Board, attached to the Bureau of Research and Statistics, Washington, D.C.

John Parke Young, chairman of the department of economics at Occidental College, is in Washington for the duration of the war to head a group of economic advisers on

BOOK REVIEWS AND TITLES OF NEW BOOKS

Latin American economic problems and policies who are assisting Vice President Wallace and other officials.

Erich W. Zimmermann has resigned as Kenan professor of economics at the University of North Carolina to accept the position of graduate professor of resources at the School of Business Administration, University of Texas, beginning September.

George W. Zinke, who has been an instructor in economics at Occidental College, has left to take a position as associate economist with the U. S. Tariff Commission, Washington, D.C.

BOOK REVIEWS AND TITLES OF NEW BOOKS

Economic Theory; General Works

Book Reviews

BAIN, *Theory of Consumer's Demand,* by R. T. Norris 357
TRIFFIN, *Theoretical Analysis of Imperfect Competition with Special Application to Agricultural Industries,* by W. H. Nicholls 359
GRIFFITH, *Introduction to Responsible Citizenship,* by W. E. Mosher and Associates 362

Titles of New Books 413

Economic History

Book Review

ROSS, *Burlington West,* by R. C. Overton 364

Titles of New Books 413

Economic Systems; National Economies

Book Reviews

BARAN, *Russia's Economic Front for War and Peace,* by A. Yugow ... 366
CONDOIDE, *Ekonomika Sotzialisticheskoi Promyshlennosti,* by E. L. Granovskii and B. L. Markus, editors 368
HARRIS, *Canadian War Economics,* by J. F. Parkinson, editor 370
CHANDRASEKHAR, *Structural Basis of Indian Economy,* by H. Venkatasubbiah 372
BARAN, *This Age of Fable,* by G. Stolper 374

Titles of New Books 415

Statistics; Economic Mathematics; Accounting

Titles of New Books 416

Business Cycles and Fluctuations

Book Reviews

ELLIS, *Investment and Business Cycles,* by J. W. Angell 378

Public Finance; Fiscal Policy; Taxation

Book Review

HUNTER, *American Public Finance,* by W. J. Shultz 383

Titles of New Books 417

Money and Banking; Short-Term Credit

Book Reviews

FETTER, *Exchange Control and the Argentine Market,* by V. Salera.. 383
CHANDRASEKHAR, *Ceylon Currency and Banking,* by B. R. Shenoy.. 385

Titles of New Books 419

International Trade, Finance and Economic Policy

Titles of New Books 419

Business Finance; Insurance; Investments; Securities Markets

Book Reviews

WEISSMAN, *Investor and the Securities Act,* by H. V. Cherrington.... 386
ECKERT, *Voting Trust: A Device for Corporate Control,* by J. A. Leavitt 387
KIRSHMAN, *Securities Market and How It Works,* by B. E. Shultz; *Stock Market,* by C. A. Dice and W. J. Eiteman 389

Titles of New Books 420

Public Control of Business; Public Administration; National Defense and War

Book Reviews

MENDERSHAUSEN, *New Economic Warfare,* by A. Basch 390

BRAY, *Arms and the Aftermath,* by P. Stryker 393
Titles of New Books 421

Industrial Organization; Price and Production Policies; Business Methods

Book Review
McPHERSON, *Hollywood: The Movie Colony, the Movie Makers,* by L. C. Rosten 395
Titles of New Books 423

Marketing; Domestic Trade

Book Review
ROBINSON, *Marketing,* by F. L. Vaughan 397
Titles of New Books 424

Mining; Manufacturing; Construction

Titles of New Books 424

Transportation; Communication; Public Utilities

Book Reviews
PETERSON, *Essays in Transportation in Honour of W. T. Jackman,* by H. A. Innis, editor 398
DAVID, *Air Transportation,* by C. E. Puffer; *Air Mail Payment and the Government,* by F. A. Spencer; *Air Transportation in the United States,* by H. Knowlton 400
Titles of New Books 425

Agriculture; Forestry; Fisheries

Titles of New Books 426

Economic Geography; Regional Planning; Urban Land; Housing

Book Reviews
SCHICKELE, *Economic Geography of the United States,* by B. Ostrolenk 402
KANTOR, *Southern Industry and Regional Development,* by H. L. Herring 404
Titles of New Books 427

Labor and Industrial Relations

Book Reviews
GULICK, *Kansas Industrial Court,* by D. Gagliardo 405
PERLMAN, *Ideologies and American Labor,* by P. K. Crosser 406
McPHERSON, *Stars and Strikes: Unionization of Hollywood,* by M. Ross 408
KÄHLER, *Wartime Developments in Government-Employer-Worker Collaboration* 410
Titles of New Books 427

Social Insurance; Relief; Pensions; Public Welfare

Book Review
LESTER, *Swedish Unemployment Policy—1914 to 1940,* by H. Clark 411
Titles of New Books 429

Consumption; Income Distribution; Coöperation

Titles of New Books 430

Population; Migration; Vital Statistics

Titles of New Books 430

Unclassified Items

Titles of New Books 431

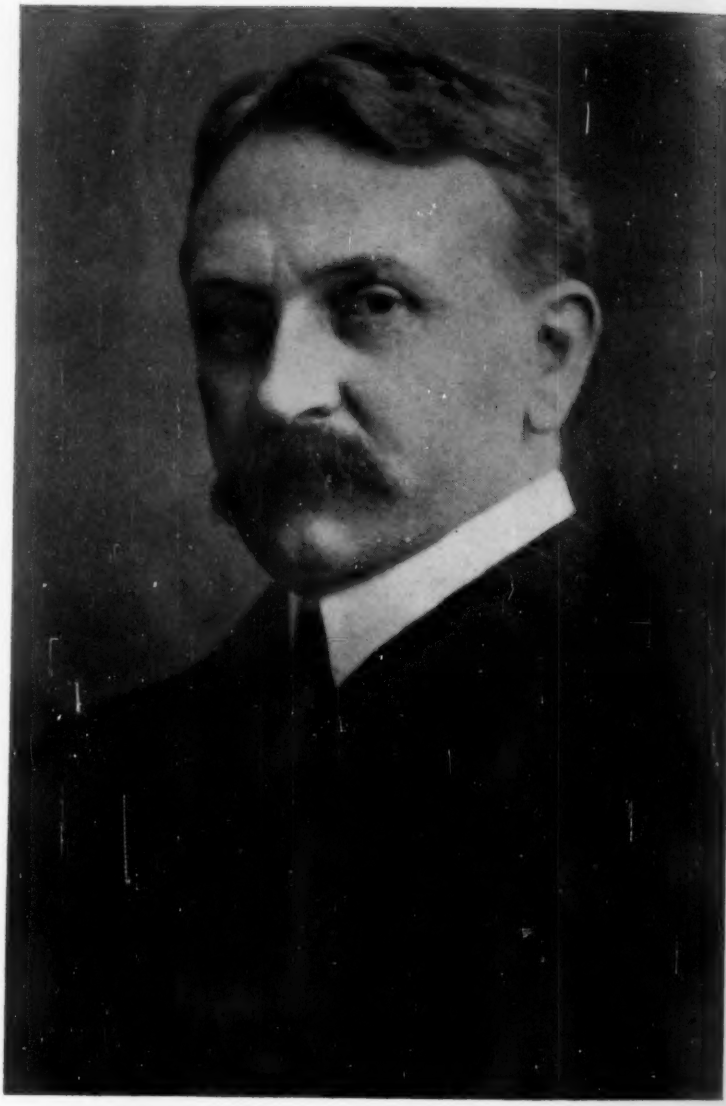
HENRY CARTER ADAMS

Fourth President of the American Economic Association, 1896-97

Born in Iowa, December 31, 1851; died at Ann Arbor, Michigan, August 11, 1921. Because of delicate health he was tutored by his father rather than receiving formal schooling, until he was nineteen years of age. He then went to college; was graduated from Grinnell College in 1874. After a year at Andover Seminary, he went to Johns Hopkins University, where he studied history and economics on a fellowship, and within two years received the first Ph.D. degree conferred by that University. Thereafter he studied in Europe, and upon his return in 1879, was appointed to a lectureship in economics at Cornell University. Later he received a similar appointment at Michigan and in 1887 accepted a full-time position at that University, where he remained head of the department until his death.

Also in 1887, he was chosen statistician to the Interstate Commerce Commission, serving until 1911, and was thus led to give a large part of his energy to problems of public control, especially as regards transportation. In this field he rendered signal service, both administrative and theoretical. He served also as chief of the Transportation Division of the Eleventh Census, and spent two years in China as adviser to the government regarding railways and finance. His principal books, aside from his writings on transportation, are *Public Debts, an Essay in the Science of Finance* (1887); *The Science of Finance, an Investigation of Public Revenues and Public Expenditures* (1898); and a brief treatise on general economics called *Description of Industry* (1918). He also published many shorter studies, some of which had a wide influence, especially his memorable essay, *The State in Relation to Industrial Action,* contributed to the Publications of the American Economic Association in 1887.

A memorial to President Adams, together with an early portrait, is found in the September number of the *American Economic Review*, 1922, pages 401-16.



Henry C. Adams.